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A study to determine the acceptability and adaptability of a teaching improvement model at the schools of medicine and dentistry at the University of Panama.

Marianne Felder Brid
University of Massachusetts Amherst

A STUDY TO DETERMINE THE ACCEPTABILITY AND ADAPTABILITY OF A TEACHING IMPROVEMENT MODEL AT THE SCHOOLS OF MEDICINE AND DENTISTRY AT THE UNIVERSITY OF PANAMA

A Dissertation Presented

by

Marianne Felder Brid

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Approved as to style and content by:

Dr. Sheryl Riechmann, Chairperson

Dr. George E. Urch, Member

Dr. Francicso Fernandez-Turienzo, Member

Dr. Mario D. Fantini, Dean
School of Education

To my Family:

Federico Alberto Brid

and

Alexander Werner Brid

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ABSTRACT

A STUDY TO DETERMINE THE ACCEPTABILITY AND ADAPTABILITY OF A TEACHING IMPROVEMENT MODEL AT THE SCHOOLS OF MEDICINE AND DENTISTRY AT THE UNIVERSITY OF PANAMA

A Dissertation by

Marianne Felder Brid

Directed by: Dr. Sheryl Riechmann
University of Massachusetts

Over the past 15 years, several methods have been developed to assess and improve the quality of instruction at universities in the United States. This study presents results of a pilot test of one of the best known of these methods, the Clinic to Improve University Teaching, to determine its acceptability and adaptability in one very critical area: the Schools of Medicine and Dentistry at the University of Panama.

The Clinic to Improve University Teaching model was used with eight faculty and administrators. Data were collected through interviews with participating medical and dental faculty members; videotapes of their classes; and questionnaires administered to participating faculty members, their students and selected administrators. These data were collected to answer the following four research questions:

1. Is the Panamanian administrator ready and willing

to look at his/her faculty members as educators? Will he/she provide them with the necessary tools to enhance their teaching, if necessary?

2. Given the authoritarian status of the Panamanian professor, are these professors willing to examine their teaching skills and behaviors, and improve on them if necessary? Will they be able to accept students' opinions of their teaching skills as part of such a process?
3. Will Panamanian college students, with their long history of political unrest and activity, who have nonetheless been a very passive group in the educational environment, take part in this process by providing their teachers with honest opinions as to how well they perform as teachers?
4. Is this model, the Clinic to Improve University Teaching, acceptable to this institution, professors and administrators alike? Does this model have to be altered due to the cultural and educational system differences?

The structured interviews and administered questionnaires were analyzed, and the following conclusions were drawn:

Administrators at the University of Panama were willing to allow exploration of a process for instructional development. For the most part, Latin American professors

were willing to examine teaching strengths and weaknesses, and were receptive to student evaluations. Many were eager to follow up to strengthen identified weaknesses. Students were enthusiastic about evaluating professors' skills, and participated eagerly in the process. Finally, it was determined that the Clinic process was acceptable in this Latin American setting, with only minor modifications recommended to suit the cultural background.

Recommendations by the researcher included the following: the design of specific definitions and outlines of evaluation methods for faculty members; the development of a teacher training program for physicians and dentists; the use of the Clinic model with tailor designed TABS questions, as well as an idiomatic translation of these items. Further research was recommended to include modifications of the initial stages of this process, as well as the application of the full Clinic model to determine actual instructional improvement taking place.

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CHAPTER I

INTRODUCTION

In the latter part of the 60's and early part of the 70's, universities found themselves with declining enrollment and diminishing outside research funds, creating almost instantly a surplus of tenured research-oriented professors with few skills in established pedagogical practices, under the impression that "knowledge of subject matter is all that is needed to train college teachers" (Eble, 1971, p.79). As this transition took place, articles by educators and administrators gave credence to the assertion that university teaching is often ineffective and incompetent (Bergquist and Phillips, 1975). University instruction is in an advanced state of degeneracy in that there exists a lack of pedagogical training in our institutions of higher learning (Diekoff, 1970; Eble, 1971; Heiss, 1970; Popham, 1970).

Increasing attention is thus given to the fact that university professors belong to a group of professionals who have received minimal or no training in teaching skills. As a matter of fact, they are probably one of the few groups of professionals who practice their profession without specific training in this profession.

This shift in focus on the part of administrators,

towards an increasing emphasis on teaching competency, coupled with the acknowledgement of little or pedagogical training for the faculty, has resulted in the emergence of a series of instructional development programs. Some of these programs have been developed to help in optimizing the learning process, with particular emphasis on the improvement of teaching skills and behaviors. Teaching improvement programs look at the faculty member as a transmitter of knowledge and skills, with a more or less perfected set of skills in transmitting, transferring or inspiring knowledge.

In the past, much of the refining and development of these skills left a great deal to be desired. To a large extent, it has been left to chance how or whether professors acquired these skills. Generally, they relied on their former teachers as role models, and only by trial and error could they avoid the same pitfalls or recognize the strengths or deficiencies which made those role models either positive or negative.

Instructional development programs have found that this haphazard approach to teaching need not be so. Of the several models developed to give feedback to the professor on the quality of his/her instruction and ways to address deficiencies, the researcher finds that the Clinic to Improve University Teaching is the most widely used process in the United States. As opposed to other models which

generally revolve around the collecting of students' opinions and giving these back to the professors, the Clinic to Improve University Teaching is composed of a variety of procedures to collect and use data, such as videotaping, observation and questionnaires (Appendix A).

As the Clinic model was used more and more in the American educational system, the question arose of whether it could be used as an effective tool in educational systems outside the United States. Projects were then established at McGill University in Canada, Hebrew University in Israel, and the University of Chiapas in Mexico. To answer this question still further, this model was field-tested in another Latin American country, Panama, concentrating on four questions central to the successful application of the Clinic method:

1. Is the Panamanian administrator ready and willing to look at his/her faculty members as educators? Will he/she provide them with the necessary tools to enhance their teaching, if necessary?
2. Given the authoritarian status of the Panamanian professor, are these professors willing to examine their teaching skills and behaviors, and improve on them if necessary? Will they be able to accept students' opinions of their teaching skills as part of such a process?

3. Will Panamanian college students, with their long history of political unrest and activity, who have nonetheless been a very passive group in the educational environment, take part in this process by providing their teachers with honest opinions as to how well they perform as teachers?
4. Is this model, the Clinic to Improve University Teaching, acceptable to this institution, professors and administrators alike? Does this model have to be altered due to the cultural and educational system differences?

Need for the Study

In America, faculty development programs have been a response to and a part of changing social and academic conditions. Harold Benjamin, a noted scholar, states in his study of Higher Education in the American Republic, that he directly relates the role of the university to the needs of the students as the clients of the educational system. He looks at the university as an instrument of advanced communication and social progress, which is designed to serve a particular culture (Benjamin, 1965). One method of enhancing the cultural base is through the education of its people. If the university is to be an instrument of advanced communication, we must look at the

professor as the transmitter of that knowledge, the link in the process of acquiring knowledge.

Only recently in Latin America, as the political situation became more stable, were leaders able to focus their attention on the educational system, and was the Latin American administrator able to look at its institutions of higher education and at its teachers in those institutions. Factors such as population growth, concomitant increased demand for higher education and resultant financial burden on the economy, complicated and increased the urgency of this examination. They found, as had American educators, a lack in the quality of education. As a result, they started to consider the potential of instructional development as one method of providing better education for more people (Bergquist and Phillips, 1970).

Scholars, examining these factors of population explosion, demand for access to institutions of higher education and quality of instruction, expressed their views accordingly. Mayobre, an economist, in his article "The Economic Background to Educational Planning in Latin America" (1965) suggests that:

> The first and perhaps the most important fact about Latin America is its rate of population growth--the highest in the world. The population of the continent is increasing at the annual rate of 3%. (p. 13)

This tremendous population growth is one of the factors

which has increased the demand for higher education. Another is the changed social composition of these students. This increase in population is taking place in a social stratum which has in the past not had access to higher education. Historically, higher education in Latin America was the perogative of the economically and politically privileged class (Benjamin, 1965). Education served as a means to ensure the continuance of that privileged class, since the philosophy and structure of education has reflected and reinforced their ideology and social position (Gomez, 1975).

Now, with increasing numbers of people not belonging to this privileged class (Table 1) and demanding access to higher education, the Latin American educational structure will have to undergo a philosophical and ideological change. Trejos (1971) feels that

> It is urgent to promote a change in the objectives and content of education to make them compatible with the development of man which a modern society aspires towards. (p 9-10)

This group of young people demanding access to higher education is not content with the traditional objectives and content of education, but demand more relevant information and courses. This results in a tremendous financial problem facing these countries, who are forced to find additional resources to finance higher education. Table 2 illustrates the financial needs as projected by planners.

TABLE 1

Higher Education Enrollment in Latin America

	1955-60	1960-65	1965-70
Enrollment in higher education per 1,000 population.	2.6	3.6	5.2
Index	100	153	268
Rate of Growth	5.5	9.7	11.1

Source: America en Cifras, 1970 OAS. Statistical Yearbook, 1970, UNESCO.

TABLE 2

Projection of Latin American Resources Needed to Finance Higher Education in the Following 25 Years (In U.S.A. Million Dollars)

Year	All Education Levels	Higher Education
1975	7,030	1,695
1980	10,495	2,840
1985	15,830	4,725
1990	20,845	6,990
2000	34,105	15,140

Source: IDB, based on official statistics from the countries.

A third element in the Latin American educational planner's dilemma is the fact that the quality of education provided will have to improve. Out of 10,000 students who enter the educational system, only four graduate with a degree in higher learning (licentiate or BA equivalent) (Trejos, 1971). Therefore, even if more and more financial resources are allocated to education, if the quality of this education is not improved, only a small number of those demanding access will really benefit from the system with a degree, since only a finite number of institutions and professors are available to provide this education.

The attrition rate of students going through the system suggests that these students are the users, but not the beneficiaries, of the system. They are the users of the system insofar as they "use up" financial resources --but they are not benefitting, since statistics show us that they do not (in any great numbers) leave the educational system with a degree of higher education. Furthermore, these students take the places of others who demand but cannot obtain access to higher education. Trejos (1971) refers to this problem when he states that:

> There is impatience among our people. Impatience which is one of the most powerful forces in the world of our times. . . . Like great swells, multitudes of children, youth and adults swarm to the doors of learning establishments demanding education and training. (p. 9)

Trejos and Gómez are addressing the problem of cost effectiveness of the Latin American educational system. The focal point in an effort to improve cost effectiveness of a system can be the teachers. Lourie (1965) suggests the following when he addresses this problem:

> One of the first steps would be the raising of the educational survival rate. This might be brought about by qualified teachers. (p. 33)

What Lourie addresses here regarding qualified teachers is not the subject competency within a particular discipline, but the behaviors and skills used to transmit this knowledge. In another analysis of the concept of qualified teachers, Coombs (1965) states that

> . . . It is clear that . . . educational planning cannot be effective unless it comes to grips with the qualitative aspect of education. (p. 7)

A closer look at the Latin American professor, who seems to lack the skills necessary in transmitting knowledge, reveals several interesting characteristics. These professors, especially in the professional schools of medicine, dentistry, engineering and architecture, have, in addition to teaching, their own professional practice or business, with teaching as a secondary occupation. Such professors are professionals well versed in their specialities, but have not been trained to teach. That very few of these people are full-time professors can be attributed to the fact that teaching as a profession in

Latin America is neither prestigious nor financially rewarding.

Another characteristic of the Latin American university is that in many instances professors are not selected according to credentials or ability, but are appointed by the Minister of Education. In some Latin American states, senior posts are actually political appointments and, as a result of frequent changes in government, political and educational incumbents change frequently (Gale, 1969).

These factors--professionals who teach only to supplement their income, together with frequent professional changes due to political appointments--do not generate an educational system in which the student is the main client. As stated before, the student is not the beneficiary, only the user of such a system. Qualtity of education, in some instances, is available to Latin American students, but quantity is not nearly as important as the quality of instruction, which is presently poor overall.

Therefore, this study is concerned with finding a viable means of improving the quality of education in Latin American universities by looking at the professors as a key element in the process of quality improvement. If, through the improved quality of teaching, more students could become the beneficiaries of the educational system, the demand for access and use of financial resources would be

better addressed.

The program considered in this study specifically addresses the needs of improved quality in professors' teaching. However, this process, the Clinic to Improve University Teaching, was conceived, designed and tailored to the American educational system, mentality and culture. This need not be an obstacle to its effectiveness in a Latin American country, since social and political ties between the United States and Latin America have facilitated the influence of American culture and its educational system over Latin America. Manual Villarán, a Peruvian educator, comments that the great nations of Europe and Latin America today have deemed it appropriate to remodel their educational programs largely after those of North American universities. They are, he feels, all engaged to some extent in expanding their culture and their race throughout the world (Mariatequi, 1973). However, given the cultural differences between the U.S. and, in this case, Panama, it was not clear what reactions the administration, the faculty and the students would have to the Clinic process or what modifications may be needed to make it work.

Statement of the Problem

Traditionally in Latin America, the movement has not

taken place to create better professors out of existing ones, by focusing on the weaknesses of the professor and building pedagogical skills so that he/she may become a better transmitter of knowledge. All available data indicate that a professor's knowledge of the subject matter, together with political influence, is all that is needed to maintain a teaching position in a government-sponsored institution in Panama.

Even though this situation continues to prevail in many Latin American educational institutions, pressures for change are making administrators and government officials take a closer look at policies which tend to favor a very small minority of privileged individuals. The need to modernize, coupled with expanded nationalism, is forcing universities to shift from the idea that education is a privilege to the concept that education is a necessity. With this trend, universities are being forced to open their doors so that mass education can take place in the most effective and economical way possible. It is this desire to deliver a more effective product to a larger audience, with limited expendable resources, that creates a ready market for teaching improvement methodologies. Thus, the purpose of this investigation is to determine if a Latin American university (the University of Panama) is ripe to accept a model such as the Clinic to Improve

University Teaching and if so, what elements must be built into this model to adapt it in such a manner that it will serve as a vehicle to improve the teaching skills and behaviors of the professors in a Latin American educational system.

Latin American universities are comprised of several schools, or facultades. Medical schools especially are centers of prestige and models of academic institutions for Latin American universities. These schools possess faculty with the most prestige, knowledge, money and therefore power. However, from an educational viewpoint, especially in these professional schools, the professors teaching the students are not educators per se, but professionals who teach. They have received minimal or no training in pedagogical skills. These schools are the most structured and organized of all the different schools which comprise a university. The students are very disciplined and there to learn a profession, not only to receive an education. When we look at the professionals in these schools, a series of common fallacies emerges, which are generally accepted of this Latin American university professor. Joaquin Paez, Director of the Educational Technological Project and Representative of the Association of Carribean Universities and Research Institutes, summarizes them when he states that:

1. There is a tendency to identify as good professors those whose courses are difficult to pass.
2. There is a concept that in order to teach, one only has to know the material (subject matter) and there is no need to learn to teach.
3. There is a psychological climate in which the process of teaching develops.
4. Learning has a tendency to be tense, in a state of cold war, or a state of uncontrolled laxitude.
5. The teaching profession as such (job), is not the source of satisfaction and personal growth for the professor.
6. The evaluation that an institution does of its professors represents for them a threat and, in a majority of cases, is perceived as more of a vigilance and control tool than a stimulant and professional aid.
7. The transmittal of knowledge is the giving of information to the students and obliging them to learn some facts or techniques.
8. Learning is a memorization and the understanding of facts, dates and formulas.
9. The professor is the most important element in the process of learning.

10. The professor is born, not made.
11. The class exists so that the professor can show what he/she knows.
12. The professor teaches the way he/she was taught, sometimes imitating models that he/she rejected as a student (Paez, 1975).

It thus appears that the university has become an archive of knolwedgeable professionals. But what is transmitted and how it is transmitted and what effect it has on the students has been largely ignored.

Keeping Paez' assessment of common aspects of the Latin American professor in mind, the question arises of whether this professor is willing to look at teaching improvement as a method not to improve subject knowledge, but to enhance the quality of the behaviors and skills of the teaching process. With this cultural background in mind, in which the professor is regarded as the "almighty disperser of knowledge," the second question that must be asked is, is he/she ready to look at the student as the beneficiary of this system of knowledge transmission and, as such, capable of judging how well that knowledge is being transmitted?

Besides examining the university and the professional professor, we must also look at the makeup of the Latin American student in this system. As a result of the

autocratic professor who is viewed and who views him/herself as the disburser of knowledge, the student traditionally is a very passive element in the educational process. He/she is accustomed to being the recipient of an effort, rather than the instigator of an action, until recently, as noted before. In a faculty development process, where student questionnaires are used as a means to provide the professor with feedback about the students' perception of teaching strengths and weaknesses, action is asked both from the professor and the student. Is this Latin American student ready to accept responsibility by actively participating in the process of his/her knowledge acquisition by providing the professors with honest assessments of their skills? This is another of the questions which will be answered in this study.

In America, faculty, students and educators found that instructional development programs are effective (Bergquist and Phillips, 1975; Erickson and Erickson, 1979). In order for these programs to be effective, the administrators had to be willing to appropriate funds for this purpose. Is the Latin American administrator at a point where he/she will look at faculty development programs as a means of improving the quality of education? Does he/she perceive the faculty in need of such assistance, and does the faculty member perceive a need for

this process? This question will also be addressed and answered in this study.

To carry out this study, the willing participation of a Latin American university had to be obtained. Determination had to be made of which of the different schools of the system was most appropriate, and which faculty members would be receptive and willing to participate. Another point of question which emerged was the acceptability and effectiveness in a Latin American environment of a process which was designed and administered in an American system. Though there exist social and economic ties between the United States and Latin America, it must be determined whether Latin American educators and administrators are willing to examine such a program, which would then be used in their educational and cultural environment. Will this process have to be changed or adapted to fit their needs? The question of acceptability and transferability of the Clinic process can only be answered through the administration of this process.

Significance of the Study

The significance of this study is to field test further this process, the Clinic to Improve University Teaching, in order to address the research questions in regard to the acceptability and effectiveness of this model in

the Panamaniam educational system and environment. If adaptations to the model as it stands now have to be made, they will be recommended so that this process will be effective in assisting the Latin American professor in his/her effort to improve teaching skills.

At the University of Panama, there is no extensive system or process to provide faculty members with teaching skills assessment and improvement. The intervention evident in the Schools of Engineering and Education is a series of seminars and workshops which deal with current topics on education, but do not provide the faculty members with hands-on experience in changing existing teaching skills and behavior patterns. If the professor, accustomed to an authoritarian role, is ready to receive instruction, it is hoped that the administration of the Clinic model will help in changing existing teaching patterns and/or help in acquiring new skills so that he/she will be equipped pedagogically to provide a better quality of education through the use of sound teaching skills and behaviors.

A different but related significance of this study is that faculty members, by emphasizing the pedagogical aspects of their teaching rather than content alone, may become more aware of their students' needs. It is hoped that they will consequently become tolerant of the student as an adult who is able and willing to take an active part

in his/her educational process through the use of student questionnaires.

The Latin American educational administrator, faced with an ever-increasing demand for education and better education, will be presented with a model which could help attain this, if participating faculty members and students have determined that such a process is acceptable and effective in their system. The question then will have to be raised by these educators of whether they will consider allocating financial resources to the development of their professors as educators.

The significance of this study, then, will be the attempt to gather some data which will answer these questions, so that improvement in the educational system, through improving the quality of the teaching of the pofessors, can take place.

Limitations of the Study

Since Latin American universities are too broad a factor to analyze, an attempt has been made to narrow the field of investigation. Since it was established earlier in this chapter that professional schools are most in need of pedagogocal training, the study will be limited to selected Latin American professional schools.

A further limitation of this study involved the

choosing of a particular university that was both accessible and receptive to the idea of instructional development. The University of Panama and in particular the Schools of Medicine and Dentistry were chosen, since their faculty had participated in a series of exploratory and/or fact-finding workshops, lectures and seminars dealing with such topics as faculty development, instructional development, etc. Both the administrators and participating faculty members felt, however, that these programs had focused only on media technology for transmitting knowledge and had left the professors short of any hands-on teaching behaviors and skills improvement. The model which was needed was one which would provide a method to analyze and help teachers improve teaching behaviors and skills. Such a model must include not only analysis, but improvement strategies as well.

The scope of the study thus was limited to the University of Panama's Schools of Medicine and Dentistry. The question of providing pedagogical assistance to their professionals who taught was of particular concern to these two schools. Since these faculty members are not trained as educators and since the students in these schools, according to their administrators, have a tendency to be more passive than in other schools, the conclusions drawn from this particular study may not necessarily be applicable

to other setting even within the same university.

The study sample included eight professors, four professors of medicine and four professors of dentistry, and included their students. Also, a total of four administrators were actively involved throughout this study: the Deans of Medicine and Dentistry, the Director of Planning, and the Dean of Academic Affairs, who was also the Acting President. A larger sample would be needed for more definite conclusions to be drawn.

Summary of Chapters

This dissertation is organized into five chapters. The first chapter includes the introduction, with pertinent background for this study, state of problem, significance of the study, and limitations of the study.

The second chapter is a review of the literature and includes 1) the major trends of thought in regard to faculty development, as they apply to the Latin American professor, school or students; and 2) the selection of a faculty development program which best suits the educational and cultural settings of a Latin American environment.

Chapter III reports the methodology used to collect the data that were used in the Schools of Medicine and Dentistry, design of the study, the major research questions posed inthis study, subjects and procedures followed

in the administration of the Clinic process through the localization stage.

The fourth chapter reports the results of the data collection and the study.

The fifth chapter will include conclusions from the study, recommendations in regard to the study, as well as recommendations for further research.

CHAPTER II

LITERATURE REVIEW

Introduction

In the United States, faculty development programs have been a response to and a part of changing social and academic conditions. At this time, more than half of all North American colleges and universities have either formal or informal programs for the improvement of classroom instruction (Centra, 1977). These programs vary in focus, with activities ranging from personal development, teaching improvement, curriculum design, and organizational improvement.

The main focus of these teaching improvement programs is the professor, as the transmitter of knowledge, and the students, as the receivers of this effort. As we examine this transmission process, three different but related areas emerge: the different methods of transmission, or teaching styles; different ways of receiving this transmission, or learning styles; and the educational environment in which this activity takes place. Since these styles and methods vary, a determination will have to be made as to which are the relevant teaching and learning styles, so that a faculty development model is chosen which is

appropriate to these styles, as well as to the educational environment. In this chapter, we will therefore review the major trends of thought concerning teaching and learning styles, as they apply to the North American environment, as well as make references to the Latin American educational settings. A review of two major teaching improvement models currently in use in the United States focuses on the Clinic to Improve University Teaching as the one model which incorporates the major elements found in other teaching improvement models. Also, this one model appears to be the most researched and evaluated in regard to its effectiveness of actual teaching improvement results (e.g., Erickson, 1979)

Background

As mentioned in Chapter I, a transition took place in the 1960's in the United States when students and administrators began to look at the professor as one who not only needed knowledge of subject matter, but one who also needed to know how to teach. Gaff, one of the leading experts on faculty development, states that "teaching is the primary . . . professional activity of faculty." (Gaff, 1975, p. 4) If we agree with this statement and feel the professor may perform this task ineffectively or incompetently, then the quality of instruction in higher education is the question. For the student, this state of inadequate quality

teaching is unacceptable, as the Danforth Foundation's Annual Report for 1964-1965 points out that "nearly every discussion of student unrest points out the relation of that problem to the poor teaching that is often found on college and university campuses." (page 4)

As mentioned earlier, the faculty member was rewarded for thorough subject knowledge, publications and active research in his/her discipline. It was automatically assumed that these elements qualified him/her to provide college level instruction. This posiiton has been challenged and threatened by the increased emphasis on the instructor's ability to provide classroom experience which is both relevant and designed to facilitate the learning process. As Wilkerson has noted (Clinic to Improve University Teaching, 1977), the premise that teaching is an art, unteachable in itself, is being systematically eroded by research that shows the relationship between the presence and the absence of particular teaching skills on the part of the professor and student achievement and attitudinal change (page 6). Such relationships are noted in the work of Allen and Ryan (1969), Hildebrand, Wilson and Dienst (1971), Berliner (1973), Gage (1975) and Centra (1977).

There seems to be a consensus among experts in teaching that there is ineffective performance by many teachers. Intervention, then, is required to encourage faculty members

to develop those behavioral skills which will enable them to remedy the ineffectiveness of their teaching and assist them in improving their instructional competence. Before any such intervention can take place, a closer look at the relationship between teaching styles, learning styles, instructional content and educational environment is necessary, since they are key elements in the process of teaching and learning. Faculty and students are involved in a process which may include a specific philosophy of education and imitation of conscious or subconscious role models. Students may be influenced by educational environments, such as formal or informal classrooms, inductive versus deductive teaching styles, and the society in which this process takes place. These factors may vary from culture to culture and even within a culture. As Bergquist (1975) points out, an effective faculty program must take into account course content, the preferred teaching style of the faculty member, the preferred learning style of the student, and the educational environment in which the course is held.

The following is a review of selected teaching styles, learning styles and definitions of educational environments, as they have been discussed in the literature and how they apply to the Panamanian professor and university setting. Also, a review of selected instructional development programs

focuses primarily on the Clinic model to be used in a specific educational setting, the Medical and Dental schools of the University of Panama.

Teaching Styles

Since the early 60's we have research which focuses on teaching and learning styles and models which have developed from this research. As we focus on the process of instruction, we find that categorizing the professors into different teaching styles can be helpful for developers of teaching improvement models.

The Adelson Model. The first of these models was developed by Joseph B. Adelson while he was a faculty research fellow at the University of Michigan. His major categories of the teaching styles found in faculty members were 1) the teacher as shaman; 2) the teacher as priest and 3) the teacher as mystic healer. The teacher as shaman is primarily concerned with the teaching of a particular body of knowledge; the teacher as priest, through the administration of tests, checks the students' retention of knowledge; and the teacher as mystic healer is concerned with the students' development by saying, "I will help you become what you are" (Adelson, 1961, p. 398).

According to Adelson, these types of teachers put their own achievement and personality secondary. Of primary

interest is their desire to help the students find what is best for them and their development, and therefore this professor chooses to work with the students' potential. In order to accomplish this, great sensitivity and acumen are necessary, since a variety of approaches will have to be developed, ranging from lenient to stern, from critical to encouraging (Adelson, 1961).

The Mann Model. In 1970, Richard Mann focuses his descriptive study of teaching styles on the professor's impact on his/her students. He views the professor as having not only a pedagogical impact, but a personal impact on students as well. He identifies six major categories of teaching styles, as follows: 1) the teacher as expert; 2) the teacher as formal authority; 3) the teacher as socializing agent; 4) the teacher as the facilitator; 5) the teacher as a person; and 6) the teacher as the ideal.

Since the Mann classification is considered by many experts as one of the most applicable ones, a closer look at these styles is warranted.

The teacher as expert. This teaching style represents the teacher as an expert and evaluator, with respect to the knowledge, expertise and wisdom that he/she can apply to the subject matter. This expertise underlies both the teacher's right to be in the classroom and the students' interest in taking the course.

The teacher as formal authority. Viewed from the perspective of the larger social structure within which the college classroom is located, the teacher is an agent not only of instruction but also of control and evaluation. He/she is responsible to a group of administrators and external agents who expect him/her to ensure uniformity of standards and a justifiable evaluation system based on merit, representing sets of grades at the end of the course.

The teacher as socializing agent. This teacher's goals typically reach far beyond a particular classroom or course. The teacher is usually a member of the community of scholars accredited by the professional or academic discipline and also a member of an institution that may be highly relevant to a student's occupational aspirations. The teacher resembles, in some sense, a gatekeeper to a vocational world. He/she serves as a representative of a field and especially the values, assumptions and style of intellectual life that characterizes that field.

The teacher as facilitator. This teacher seems less absorbed with his/her own expertise and field, and takes a great interest in the students' aspirations. By not assuming that he/she can specify what skills and goals the students already possess, this teacher sets about to determine where the students are and where they heed help to do better. The teacher as facilitator may employ far

more listening and questioning than lecturing and assigning.

The teacher as a person. The teacher as a person aims at engaging the students in a mutually fulfilling relationship. Ideally, both the students and teacher feel sufficient trust and freedom to share their ideas and personal reactions, not only regarding the course or material, but also matter that may fall outside the usual definitions of what is relevant in a classroom.

The teacher as the ideal. In this case, students use their teacher as a model in the continuous process of formulating and approaching their ideals. This idealization may be limited to certain aspects of the teacher's total performance, but its process is an important part of the college classroom.

The Axelrod Model. Three years later, in 1973, Joseph Axelrod examined teaching styles in yet another light, focusing his attention on the teacher using what he calls modes of teaching. Two of his defined modes, the didactic and the evocative, are appropriate to the examination of the medical and dental instructor at the University of Panama as well.

Axelrod classified didactic modes as teaching styles which are designed to achieve objectives that are generally clear and relatively easy to formulate. These objectives

include the mastery of a defined body of information, the acquisition of specific motorkinetic skills, or specific mathematical or verbal skills (in English as well as in other languages). Thus, the didactic modes stress either cognitive knowledge acquired primarily by memorization, or mastery skills acquired primarily by repetition and practice.

The basic difference between the didactic mode and the evocative mode of teaching, according to Axelrod, is the method used in the learning process. The major means employed in the evocative mode are inquiry and discovery (Axelrod, 1973).

These studies from the U.S.A. suggest a range of teaching roles. The most common one in the United States is probably that of information giving. This appears true to an extreme degree in Panama. Teachers in Panama can be characterized, using Mann's definitions, as experts, authority and socializing agents.

The styles of teacher as expert and teacher as authoritarian are typical of Panamanian medical and dental professors who are experts in their professions, as well as evaluators of students' effort to become members of these professional groups. The teacher is an expert, students are there to learn from the teacher and the students' interest in taking the course is to absorb some of this

expertise. Examining the evaluation system of the Latin American vocational school, there is definite control and evaluation. From an administrative viewpoint, the teacher is expected to set and enforce standards and pass his/her students only after they have met those standards.

Mann's second definition, as it appears to apply to the Panamanian instructor in the professional schools, is the teacher as a socializing agent. In the professional schools, especially the Schools of Medicine and Dentistry, the teacher is a member of a community of scholars, accredited by professional discipline and therefore a member of an institution highly relevant to a student's aspirations. Here we see how a teacher definitely resembles a gatekeeper and, at the same time, he/she is a represnetative of values, assumptions, intellectual and personal life styles that characterize his/her discipline.

Axelrod's definition of the didactic mode teacher is appropriate to an extreme degree in the Medical and Dental schools, due to the nature of these schools and of the faculty instructing in them. It appears that the Panamanian professional teachers' instructional objectives definitely include the mastery of specific bodies of knowledge, as they relate to the acquisition of specific skills in the medical and dental professions. Skills primarily acquired by repetition and practice are stressed in the laboratories and clinics, where the students have to practice newly

acquired skills. This is probably true both in North American and in Panamanian medical schools.

In summary, observations by the researcher led to the conclusion that the dominant teaching styles utilized by the medical and dental professors at the University of Panama are content centered, with the professor being the expert, the authority and at the same time a representative of the values and life styles of the professions these students aspire to.

Learning Styles

In the development of an instructional development program, students' learning styles must be considered as well as professors' teaching styles, since they are interrelated. Research on students' learning styles has produced a variety of conceptual models, the two major ones developed by Mann and colleagues and Grasha and Riechmann.

The Mann Model. In 1971, Richard Mann and colleagues identified different styles of learning. These styles were identified using interviews, tape recorded class interactions and questionnaires. The eight learning styles, as defined by Mann and colleagues, are: 1) compliant students, who are task oriented; 2) anxious dependent students, who are dependent on their teachers for knowledge and support; 3) discouraged workers who are dissatisfied with themselves;

4) independent students who look at the material objectively and work with it creatively; 5) heroes, who feel superior to the other classmates and mistrust authorities; 6) snipers, whose low self-esteem produces a relative non-involvement; 7) attention seekers, who have a predomanant social rather than intellectual orientation; and 8) silent students, who are characterized by what they do not do, rather than what they do, in the classroom.

Of these eight learning styles, the following seem characteristic upon examining the Panamanian medical and dental students.

Compliant students are quite content with their classes, their teachers, and themselves. They are consistently task-oriented and rarely experience the kinds of emotions that might interfere with the pursuit of that task. They work because their parents expect them to, and because the teacher will grade them. Their main concern appearns to be understanding the material.

Anxious dependent students are very dependent upon the teacher for knowledge and support, and often anxious about being evaluated. On the inside, they are somewhat angry about this dependency, but on the outside, they are mostly frightened or anxious. This anxiety keeps most of them from doing anything constructive in the classroom. These students are tremendously concerned about their grades.

The attention seeking students tend to have a predominantly social rather than intellectual orientation. They are concerned with their relationship with the teacher and other class members, particularly in regard to pleasing them.

The general characteristics of the above learning styles are important, since the relationship between the students and the professors influences the students' behavior. In Panama and in the U.S.A., physicians and dentists control the number of students who are accepted into these schools. Furthermore, faculty members very often control or head hospital sections and clinics where these students will practice after completion of their studies. With this, they control the development and advancement of these students after they have terminated their teacher-student relationship. In addition, Panama is a very small country, and these faculty members have a further interest in these students since they will become members of a very closed society which interacts not only professionally, but socially as well. Since all of these elements are present and known by the professors as well as the students, certain of Mann's learning styles are accentuated.

The Grasha-Riechmann model. Anthony Grasha and Sheryl Riechmann in 1974 based their definitions of student learning styles on student reports about student attitudes

toward learning, their views of teachers and peers and their reaction to classroom procedures. Six styles defined by Grasha and Riechmann are: 1) the competitive student, who works to perform better than others in the class; 2) the collaborative student, who learns by sharing ideas and talents using the classroom as a place for social interaction as part of learning; 3) the participant student, who takes part in as much of the class related activity as possible; 4) the dependent student, who sees teacher and peers as sources of support and structure; 5) the independent student, who works on his/her own, but is willing to listen to the ideas of others; and 6) the avoidant student, who is non-participant and not interested in learning in the classroom setting.

Of these six styles, the two which seem most relevant to the examination of the Panamanian student are the competitive student and the dependent student. Therefore these two styles warrant a closer look as defined by these authors.

The competitive student. "This response style is exhibited by the student who learns material in order to perform better than others in the class. These students feel they must compete with other students in the class for the rewards of the classroom, such as grades or the teacher's attention. They will use the classroom as a situation where they must always win" (Bergquist and

Phillips, 1975, p. 37).

The dependent student. "This style is characteristic of the student who shows little intellectual curiosity and learns only what is required. These students view their teachers and peers as a source of structure or support. They look to authority figures for guidelines and want to be told what to do" (Bergquist and Phillips, 1975, p. 37).

The first category focuses on the element of competition. The competition to enter medical and dental schools is fierce, and this competition remains pronounced among medical and dental students throughout their studies. This competition develops even further later on, as students vie for assignments which they perceive as advantageous or desirable. Students do not perceive assignments in the country, the interior or any city other than the capital as desirable. The inclusion in the professional clique is of major importance for a prosperous career, and students perceive that this is facilitated if they can remain in the capital. All of these elements support the competitive and dependent students' learning styles as defined by Grasha and Riechmann.

In summary, the Latin American student has been taught to be competitive and dependent. Competitive, he/she is taught that the reason to learn is to perform better than others--to compete for reward or recognition--and he/she can

only remain in the system if good grades or the teachers' attentions are attained. These same elements have fostered a dependency, in which the student has been taught to learn what is required and accept what has been taught.

Adelson, Mann, Axelrod, Grasha and Riechmann have provided us with definitions of teaching and learning styles which are relevant to the effective design of any teaching improvement program. If we are therefore to examine the application of a teaching improvement program in Latin American schools and in particular the Schools of Medicine and Dentistry at the University of Panama, the design of such a program must accommodate these styles if the program is to be acceptable and effective in these schools.

Educational Environment

A third element in the analysis of the process of instruction is the educational environment in which teaching and learning take place. Bergquist has defined two major categories in this area: the traditional, or the classroom setting; and the non-traditional. which includes courses taught outside the classroom. Bergquist (1975) feels that in the United States, this division has become somewhat inadequate. As the number and variety of non-traditional environments increase, the North American professor in the 1970's is designing the instructional environment of the

classroom in new ways and is exploring more sophisticated classifications of educational environments. Bergquist classifies these into six educational environments.

Teacher-oriented environment. This is a traditional classroom setting with the seats facing towards the front, and the teacher located behind or beside a table or lecturn.

Automated environment. This setting utilizes program instruction, computer assisted instruction, educational television, and other automated means of instruction. It can also be an interaction-oriented environment where students and teacher face each other, chairs are located around tables in a formal setting, or there are comfortable chairs in a large, open, multi-use base in a collegiate setting.

Student-oriented environment. This environment offers the student the opportunity to work in an independent study or contract learning program. The student has available the library, laboratories, museums, private room, lounge and other university facilities.

Sheltered experience-oriented environments. The instructor in this learning environment creates simulated work or life experiences such as games, role-plays, instructional simulations, laboratory experiences, apprenticeships, practicum experiences and workshops.

Experience-oriented environments. This setting involves field experiences, on-the-job experiences, work-study programs, internships, and offers academic credit for life experiences.

In Panamanian medical and dental schools, the teacher-oriented environment is the most prevalent. The experience-oriented environment, especially the laboratory, the dental clinics in the School of Dentistry and in the field--the interior--are the other education settings in which the majority of teaching and learning takes place.

Therefore, if the examination of these schools reveals a traditional setting, a teaching improvement program which has been designed for this setting, where the traditional lecture and discussion modes are prevalent, will be most appropriate.

Instructional Development Models

Even though instructional development programs are in use in over half of this nation's institutions of higher learning (Centra, 1977), there is no centralized organization which deals with this topic and to which these institutions could look for guidelines. Because of this, the information pertaining to these various models is not as accessible as one might expect. The existing instructional development accounts are primarily due to William Bergquist,

Steven R. Phillips (1975), Jack Lindquist (1978), and the Clinic to Improve University Teaching (1977).

The following is a review of two teaching improvement models which have been successful in the North American educational system. Special attention is given here to microteaching as the one system which was instrumental to the design of instructional development programs, and to the Clinic to Improve University Teaching, which seems to be the one model which incorporates the majority of elements found in teaching improvement models. These programs were selected because they are representative of the field and were designed for application in the traditional classroom, and have been demonstrated to be effective in improving the quality of teaching behavior (Erickson and Erickson, 1979).

The Panamanian professional schools are characterized by the traditional classroom setting with traditional lecture format being the most widely used form of instruction. A model which was designed for this setting seems therefore the most appropriate.

Microteaching. Microteaching, as developed originally by Dwight Allen in 1962 at Stanford University, is a pre-service practice in teaching for novice teachers. As a teaching improvement model through self-confrontation (Allen and Ryan, 1969), it helps faculty members discover instructional strengths, weaknesses and problem areas on which to work.

The basic sequence in microteaching is to teach, analyze and reteach. This can be accomplished in an actual class environment or a laboratory setting. A whole lesson can be videotaped from an actual class, and aspects of this lesson can be isolated on videotape for later review. Normally, under trained supervision of an educational consultant or teaching improvement specialist, the isolated segments are reviewed by the professor, an observer or a group of observers. This model, which emphasizes instruction, utilizes several sources of feedback: supervisors, groups of observers, students, the professor, and the videotape. Together these sources provide the professor with information which heightens knowledge of his/her teaching skills and behaviors. Since this instructional development model is not limited to any given discipline, it can be utilized across subject matter lines.

Although this model was originally designed for training the novice teacher in a laboratory environment, where "the normal complexities of classrooms are reduced and teachers receive a great deal of feedback on their performance" (Allen and Seifman, 1971, p. 22), it has evolved to become an important data source for the analysis of classroom instruction (Miltz, 1975).

The Microteaching model could be used successfully with the Panamanian professional teacher, the physician and

dentist, since at least the analysis and reteach portions can be utilized outside the classroom. These faculty members might therefore feel less defensive about admitting to teaching weaknesses and be willing to try to improve specific skills, if it could be done without the students being present. Microteaching alone, however, is only intended to serve as a point of reference for instructional development, and was and is not intended to be used as the only source of data. It is best used in addition to other data sources, such as questionnaires and observation, which are integral parts of any teaching improvement process.

The Clinic to Improve University Teaching. The Clinic to Improve University Teaching was designed by Dwight Allen and Michael Milnik (1971) at the University of Massachusetts, Amherst. This teaching improvement process utilized teaching analysis instruments to diagnose teaching strengths and weaknesses, and trained staff to help faculty members select strategies to improve on their teaching skills.

Authors who have dealt with instructional development programs have described the Clinic process as very comprehensive and successful (Mathis and Holbrook, 1972; Bergquist and Phillips, 1975; Erickson and Sheehan, 1976; Lindquist and Bergquist, 1978; Erickson and Erickson, 1979). The following is an overview of the Clinic process, based on

materials provided by the Clinic to Improve University Teaching.

In the Clinic process, a faculty member (client) and a trained Teaching Improvement Specialist (TIS) had a one-to-one relationship. Training of the TIS consisted of a year-long program in aspects of clinical supervivion, teaching, learning and the Clinic process. The internship period during which the TIS worked with faculty members under the supervision of a specialist was also included in this model. Since the relationship between the client and the Teaching Improvement Specialist was to a great extent based on trust, the TIS's were carefully trained in interviewing, observation, listening and responding skills, in order to ensure that the faculty member was able to begin as early as possible to look to the TIS as a "helper" in the process of improving teaching weaknesses and problems.

The Clinic process itself was divided into the following five stages: I: Introduction and Interviews; II: In-Class Data Collection; III: Localization; IV: Improvement Strategy; and V: Evaluation.

Stage I: Introduction and Interviews. During the initial segment, information about the instructor's teaching objectives and plans was collected. Also during this initial meeting, the faculty member was introduced to the general sequence of activities which were part of the whole

process. After a careful explanation of the confidentiality of this process, a specific class in which the work was to take place was chosen. The faculty member received at this meeting a copy of the Course Information Form, the Instructor's Self-Assessment, the Teaching Analysis by Students questionnaire, and definitions related to the TABS items (see Appendices B, C and D).

The second meeting was the initial interview, in which the TIS developed the type of rapport in which the client would feel free and comfortable. Emphasis was placed on this, so that the process could be effective through a mutually trustful relationship. The TIS had been trained to be most interested in the faculty member and his/her goals, objectives and problems, since research had indicated that the greater the TIS's interest, the greater the response of the faculty member (Sanford, 1971). This interview concluded with the client deciding which class would be observed, since one observation usually sufficed.

Stage II: In-Class Data Collection. This stage consisted of two phases: videotaping and TABS administration.

The videotaping phase involved videotaping a segment of a class, the data from which was used for reference and for analysis at a later stage. In order for the videotape to be representative of the client's class, it had to include various segments from an observed class, not just

beginning, middle or end. It normally also included any problem areas previously identified by the teacher during the first meeting or initial interview which became evident during the filming of this segment. Normally, the TIS was introduced to the class at this time, since he/she had become a visible part of the process.

This was followed by the administration of the Teaching Analysis by Students (TABS) questionnaire, which the Clinic process used as one of its main data sources. This questionnaire, in addition to eliciting student opinions of faculty members' teaching skills, was also used for teacher self-assessment. It was intended to help "instructors identify and effectively use their particular teaching strengths, to isolate their specific teaching problems, and to develop improvement strategies directed at these problems" (CIUT, 1977, p. 1). This instrument included statements describing a variety of teaching behaviors considered important. The items were derived from descriptions of teaching skills and behaviors extracted from Hildebrand, Wilson and Dienst, the Stanford microteaching literature, and the teaching experience of the Clinic staff (Green and Hruska, 1976). The first 38 items on the student questionnaire (Appendix B) were designed to provide "specific information on each of the 20 teaching skills that form the crux of the Clinic's Teaching Improvement Process "

(Wilkerson, 1977, p. 9). These TABS skills were viewed as beginning points in the study and improvement of teaching, and were not intended to be a list of the major instructional skills needed by an effective teacher. The analysis of the TABS data and the ensuing consultation with the Teaching Improvement Specialist could lead to the examination of teaching methods, curriculum design and other related factors.

While the students responded to the TABS items, normally during a class period, the client responded to it also by predicting the students' responses, and also by assessing his/her own teaching skills. All of this data, the students' responses, the instructor's self-assessment, and the instructor's predictions were then fed into a computer prior to the localization stage of the process.

Stage III: Localization. This stage consisted of two phases: the videotape analysis, and the combined data source analysis.

The videotape analysis included a review and detailed analysis of the videotape. Often, the client first reviewed the videotape without any comments by the TIS. The second review was interrupted by discussion and comments from the TIS and the client. This is one of the most sensitive segments of the whole process, since the client very often was confronted for the first time with his/her teaching strengths

and weaknesses, and therefore this could become a very stressful situation. Fuller and Manning (1973) pointed out that during this stage, it is imperative that the TIS use great tact and sensitivity and support in working with the client. After analysis of the videotape, the client was instructed in how to read the TABS computer printout, isolate areas of concern to him/her, and then reviewed it without the TIS being present.

During the combined data source analysis, which normally is the meeting after the videotape viewing, the TIS explored with the client the strengths and weaknesses of his/her teaching, as evidenced by the combined data sources reviewed so far. This meeting was conducted in the most supportive environment possible, to avoid having the faculty member focus only on teaching weaknesses and ignore the strengths present. This data review took from one to two hours. After this session, the client then had to determine if he/she was willing to continue the teaching improvement process with the TIS, if he/she wanted to work alone in improving problem areas, or if he/she wanted to drop the entire process at that time.

Stage IV: Improvement Strategy: During this stage, strategies were formulated for the improvement of existint problem areas, as defined by the TIS and the client. If the client, after having identified problem areas through

the use of videotapes, TABS, or observations, had generated enough insight to take advantage of his/her own resources, one step in the teaching improvement process had already been accomplished. The length and the depth of this stage depended entirely on the client's needs and willingness to participate further in this process.

Stage V: Evaluation. An evaluation of the whole teaching improvement process usually took place at the end of the semester. This evaluation might include a retaping of a class session or the administration of a modified TABS questionnaire, which specifically dealt with the identified weaknesses of the client. Together, the faculty member and the TIS analyzed this data and decided what improvements had taken place. In addition, they might plan activities for the next academic semester.

Summary

Bergquist and Phillips feel that the teaching improvement process developed at the University of Massachusetts "offers perhaps the most powerful methodology yet conceived for the actual improvement of in-class teaching (Bergquist and Phillips, 1977, p. 78). Erickson and Erickson in their study on the Clinic's effectiveness found that "the instructors who go through the teaching consultation procedure make qualitiative changes in their teaching skill

performance which are evident to students in subsequent courses" (Erickson and Erickson, 1979, p. 682). Furthermore, these researchers have found that these teachers consider such a process useful and "well worth their time and effort in that it results in significant, positive and lasting changes in their classroom teaching skills performance" (p. 683).

In addition, it appears that it is the only model which has been continuously developed, tested and revised to ensure that the individual needs of faculty members can be met through the Clinic process. It is a model which relies heavily on a one-to-one relationship, confidentiality, and a helping relationship of the Teaching Improvement Specialist to the clients. The physician and the dentist, in their practices, rely on diagnostic skills, interpersonal skills, have a one-to-one relationship with their clients, use a variety of data sources to identify problems, and then help their clients solve their problems.

After examining several teaching improvement models, the one model which makes use of these very same patterns, skills and behaviors is the Clinic to Improve University Teaching. Because of the similarities of this model to the practice skills of these physicians and dentists, it was of special interest to see if the process would be an acceptable and effective method for improving their teaching

skills and behaviors by applying the same skills which makes these individuals specialists in their fields to their teaching careers.

In keeping with the Clinic's mode of developing and further refining the process in order for it to be applicable in settings for which it was not originally designed, this process was administered to medical and dental faculty members of the University of Panama, and necessary modifications discovered and discussed. In order to obtain information about the applicability and effectiveness of this particular model, the researcher developed specific questionnaires to be administered in addition to the Clinic process to the participating faculty members, students and administrators. Chapter III describes the rationale for the development of these questionnaires, as well as the pilot study of the Clinic through its localization stage. Combined, these data provided information about the acceptability, adaptability and effectiveness of this model in another educational setting.

C H A P T E R I I I

METHOD

Design

This is a case study designed to provide information regarding the acceptability and effectiveness of, as well as modifications needed to, an American teaching improvement process, the Clinic to Improve University Teaching, applied to a Latin American setting (Panama). All data for the study came from the administrators, faculty and students of the Medical and Dental Schools of the University of Panama.

The following four research questions served as the basis for this study:

1. Will administrators of a Latin American university permit deans and faculty members to mutually explore a systematic approach towards a process for instructional development?
2. Are Latin American professors willing to look at themselves as educators, with pedagogical strengths and weaknesses, and are they receptive to student evaluations of their teaching skills and behaviors?
3. Are Latin American students willing to accept responsibility to analyze their professors' teaching skills and behaviors as part of an instructional

development process?

4. Is the Clinic process acceptable to faculty members in an educational setting outside that for which is was designed, and what aspects of this process, if any, will have to be modified to make it effective?

In order to address the first question, the following procedures of this descriptive case study were:

1. Select, by way of an exchange of letters, a Latin American academic institution willing to participate in such a study.
2. Disseminate to a selected cooperating institution introductory materials developed by the Clinic to Improve University Teaching.
3. Arrange a series of meetings and conferences with administrators to discuss this instructional development model, the Clinic to Improve University Teaching.
4. Arrange for the setting up of the study.

The second question, concerning faculty's willingness to participate in a faculty development pocess, was addressed through the following procedures:

1. Preliminary conferences with selected administrators and/or faculty members within the Schools of Medicine and Dentistry.

2. Development of rapport between the researcher and the participating subjects via an informal interview session.
3. Administration of the clinic process.
4. Administration of a questionnaire designed to obtain feedback on faculty perceptions of the Clinic process.

The third question addressed the students' willingness to participate in this sype of educational activity through the following prcedures:

1. Administration of the TABS questionnaire, designed to obtain data on students' perceptions of professors' teaching strengths and weaknesses.
2. Administration of a questionnaire designed to elicit students' responses to their particpation in the study in regard to the form and content of the TABS questionnaire.

The fourth question, whether the Clinic process was acceptable in a Latin environment, was addressed by giving the Clinic to Improve University Teaching a trial run through its data collection and feedback (localization) stage. Volunteers from the Schools of Medicine and Dentistry participated in this study. All faculty subjects completed personal interviews and a series of questionnaires which were utilized in conjunction with a later feedback session.

All of the participating professors were videotaped while instructing a class, and their students were asked to complete questionnaires on their performance. Each faculty member had the opportunity to compare his/her questionnaire responses to those of his/her students, as well as view the videotape. The professor, with the aid of the researcher, focused on areas of mutual concern, and decided the follow-up procedures to the findings of this data.

At the conclusion of the trial run of the Clinic process through the localization stage, each of the participating professors and selected administrators were interviewed by the researcher using a structured interview format. The preceding data, together with these interviews, served as the basis to determine the effectiveness of this model in the researcher's judgment.

This chapter describes the study in terms of the sources of data utilized and procedures for collection of the data.

Case Study Selection

The University of Panama was selected as the Latin American university which would be most suitable for this study for the following reasons: 1) The Academic Dean of the University of Panama had indicated that the University was looking for a method to improve the quality of

instruction; 2) Panama was a Latin American university which wanted to allocate resources for faculty development; and 3) the researcher was familiar with the culture, language and academic climate of Panama.

Subjects

In a series of meetings with the Director of Planning and the Acting President, it was decided that faculty members of the Schools of Medicine and Dentistry would participate in this pilot study. The subjects were eight professors from the University of Panama, four from the School of Medicine and four from the School of Dentistry. The specific respondents were identified through a series of meetings with the Dean of Medicine and the Dean of Dentistry during which the objectives, goals and procedures of the program were described. The following are the pedagogical profiles of the participating faculty members in regard to their subject matter, class size, student classification and teaching experience:

1. Dr. A.: Dean of the School of Dentistry. Three years teaching and administrative experience. Observed class: Orthodontics. Combination lecture and laboratory course to 39 third-year dental students.
2. Dr. F.: Seven years teaching experience. Observed

class: Prosthetics, Partial and Removable. 30% lecture and 70% laboratory course to 30 third-year medical students.

3. Dr. N.: Director of the University's Dental Clinic. Three years teaching experience. Observed class: Ethics and Jurisprudence in Odontology. Lecture course to 35 third-year dental students.
4. Mr. M.: Sociologist. Twenty years teaching experience. Observed class: Sociology and Human Relations. Lecture course to 75 second-year dental students.
5. Dr. D.: Three years teaching experience. Observed class: Biochemistry. Lecture course to 75 second-year medical students.
6. Dr. E.: One year teaching experience. Observed class: Pharmacology. Lecture course to 120 fourth-year medical students.
7. Dr. P.: Fourteen years teaching experience. Observed class: Physiology. Lecture class to 105 third-year medical students.
8. Dr. S.: Assistant Dean of the School of Medicine. Twenty years teaching experience. Observed class: Pharmacology. Lecture to 95 second-year medical students.

Instrumentation

Prior to commencing the pilot study in Panama, the researcher and her then dissertation advisor designed the questionnaires that were to be administered to the students, the faculty and the University administrators.

Students. The questionnaire to the students was aimed at obtaining information on how they perceived themselves participating in a faculty development program. Since this participation comes from completing the TABS questionnaire, this questionnaire focused on their reaction to the TABS. Assessing student reactions was very important, for we were to work with a student body totally unfamiliar with this type of feedback process. Up to this time, no attempt had been made to elicit organized information from the students on how they felt about the quality, content and instructional process taking place in their classrooms. In preparing this questionnaire we also took into consideration the traditional view that the faculty member was there to disburse knowledge, and that it was up to the student to develop the necessary learning techniques to be able to absorb the imparted knowledge. The burden was on the student to learn, rather than on the teacher to teach. Table 3 presents the questions asked of the students.

Faculty. Five questions were designed to obtain from the

TABLE 3

Questions Asked of Students

1. Do you feel that this questionnaire would be useful to faculty members? Why?
2. What do you think are the five most important questions?
3. What do you think are the five least important questions?
4. Are there any additional questions you would like to be added? If so, what are they?
5. The length of this questionnaire is
   a) too long
   b) too short
   c) just right

faculty their opinions of the acceptability and potential adaptability of the Clinic model. Assessing faculty members' opinions of a model which utilized student opinions of their teaching skills was important, since traditionally faculty members had no cause to elicit formal student opinions in regard to their teaching as far as content matter or method of delivery. Table 4 presents questions asked of the faculty.

Administration. Since the Director of Planning and the Acting President of the University were the two individuals that had decided that they were willing to explore the feasibility of this particular model, the researcher asked them to participate, along with the Deans of the Schools of Medicine and Dentistry, in the process by responding to five open questions at the conclusion of the pilot test of this model. The aim of these questions was to obtain information on their perception of the validity of the model and what, if any, elements had to be incorporated into the model to make it a useful faculty development instrument at the University of Panama. Table 5 presents questions asked of the administration.

Procedure - Clinic Process Implementation

This section discusses the procedures by which the Clinic to Improve University Teaching process was

TABLE 4

Questions Asked of Faculty

1. Is this model (Clinic to Improve University Teaching) generally acceptable?
2. What kind of adaptations will have to be made to fit this culture and educational setting?
3. What are the strengths of the model in this setting?
4. What are the weaknesses of the model in this setting?
5. What has to be changed to modify these weaknesses?

TABLE 5

Questions Asked of Administrators

1. What type of faculty development programs have been used in this University?
2. How does the Clinic process compare to these programs?
3. Do you think that the Clinic to Improve University Teaching model could be best utilized by
   a) specific schools
   b) the whole University.
4. What types of comments do you have regarding the Clinic process in regard to
   a) strengths
   b) weaknesses
   c) modifications to be made?
5. What type of followup do you perceive to be appropriate:
   a) education consultant come to Panama
   b) individual(s) sent to the U.S. to be trained
   c) other

administered. Though the results of the Clinic process were not of interest in this study, the reactions of participating members were. Consequently, the steps completed in the application of the Clinic process are provided to give an overview of how the Clinic intervention proceeded and to note the reactions to it that surfaced during the course of the process. Reviewed here are the procedures used in the initial interview, classroom observation, administration of the teaching analysis by students (TABS) questionnaire and videotape, and the final localization of teaching strengths and weaknesses.

Initial interview. Following the selection of the participants, one three-hour individual interview session was held with each professor. The main objectives of this interview were to get to know each professor, answer their questions about the project, and clarify concerns. Also during that interview, a questionnaire was completed by each professor before the program started (Appendix C, Clinic to Improve University Teaching Course in Formation Form).

The second part of this interview was spent clarifying teaching skills and behaviors noted in the TABS questionnaire (Appendix D), as well as the questions posed in the TABS questionnaire. The researcher then proceeded to review the terms, questions and the professors' educational attitudes, philosophy and educational goals of the course

which was to be observed. Also, copies of course assignments, bibliographies and examinations were collected. At the conclusion of this interview, time was arranged for the course chosen to be observed, and for the videotaping of the course after the observation.

Classroom observation. During the initial interview, all of the medical faculty members had decided that the lecture portion of their courses was to be observed and taped. The laboratories were not conducive to the videotaping, since the faculty members felt that their students would be too distracted. The number of medical students per course ranged from 75 to 120. Two of the faculty members had decided to introduce the researcher at this time to their students, outlined the process as far as the Clinic was concerned and asked their students to participate fully. The other two faculty members decided not to give an introduction at this time, waiting for the collection of the TABS questionnaire and the videotaping. All of the dentistry faculty members introduced the researcher at this time, since their classes ranged from 35 to 75 students and they felt that the researcher's presence would be noticed. They decided to introduce the researcher as a doctoral student doing a pilot project dealing with the assessment of professors' teaching skills and behaviors, and they as subjects had volunteered to participate.

All eight faculty members were observed during a one-hour class session, and the researcher noted particular teaching skills and behaviors which were practiced during these sessions. Notes taken during this time provided information for discussion during a later localization stage.

TABS. The questionnaire labeled TABS (Teaching Analysis by Students) (see Appendix B) used in this study was based on a booklet developed by the Clinic to Improve University Teaching at the University of Massachusetts. It requires the students as well as the faculty members to judge the overall effectiveness of twenty individual behavioral skills. Resopnses to the TABS items are made using a scale of 1 (no improvement is needed, very good or excellent performance) to 4 (considerable improvement is needed, generally poor performance). A rating of "not applicable" (5) is also included.

The professor was asked to complete a faculty self-analysis form based on the twenty skills listed in the questionnaire, as well as to complete a separate student prediction form testing how well he/she predicted the students would evaluate those twenty skills in question. The students were asked to complete the same questionnaire as the professors, rating them in those behavioral skills.

Videotape. Each of the participating professors' classes was videotaped, utilizing one-minute taping sessions at five-minute intervals during the entire one-hour class session. Total videotape time per class averaged 10 minutes. The focus of these sessions was on the professors' skills in transmitting his/her knowledge to the students. Student behavior was photographed only when it was being impacted visually by the professor's behavior. The researcher focused on the twenty teaching skills and behaviors noted in the TABS questionnaire. This videotape session was taken after the classroom observation but before the professor had seen the results of the comparative analysis between his/her ratings on TABS or had been told about reactions to the observation.

Localization. The following data are used in assessing individual faculty members' performance of the twenty teaching skills and behaviors: 1) Stated course objectives; 2) classroom observation; 3) students' responses to the TABS questionnaire; 4) faculty members' self-assessment and predictons of the TABS items; and 5) videotape segment.

For this session, the forms completed by the students and the faculty members (TABS items) were compiled by computer into the Comparative Analysis Form. These forms

summarize the participants' evaluation of the professors' performance on each of the twenty skills of teaching, and their answers about every question within these twenty skills. These data, supported by the notes taken during the initial interview, provided the basis for discussion between the professor and the researcher.

In this session, each professor viewed the classroom videotape with the researcher. The computer printout was then given to the professor, and together with the researcher they analyzed the data. The purposes of this session were to 1) confront the professor with him/her self as an educator; 2) enable him/her to see him/herself as the students see them; 3) analyze his/her teaching in light of his/her self analysis and students' responses and 4) analyze the videotape with the aid of the researcher, focusing on a few selected teaching skills. At the conclusion of this meeting, the researcher decided together which, if any, of the twenty skill areas would be selected for further study, either by forwarding relevant material to the professor or by internally exploring ways to improve a particular skill.

At this time, general comments and perceptions on part of the faculty member regarding the model's impact, surfaced on a non-structured way, since another session was planned during which the professor would be asked to

respond to a specific questionnaire regarding the Clinic's effectiveness and adaptability. A date was set for this discussion at the end of the localization stage.

Procedure - Questionnaire Administration

Students. The researcher asked all participating faculty members for permission to administer a student questionnaire to the students participating in the eight observed classes. The purpose of this questionnaire was to determine if the students found the TABS questionnaire to be appropriate to the learning situations, and to elicit their opinions as to the faculty evaluation questionnaire and its length. These questions were presented in Table 3.

Faculty. A questionnaire asking six open-ended questions was administered in a separate session by the researcher. The purpose of this questionnaire was to determine if the faculty members considered this teaching improvement model acceptable to them as faculty members and what, if any, modifications had to be made. In addition to the questions asked in Table 4, faculty were asked whether they thought the Clinic to Improve University Teaching should be adopted and used in the Schools of Medicine and Dentistry at the University of Panama.

Administration. Prior to the exit interview, the Deans

of Medicine and Dentistry, the Academic Dean and the Director of Planning were given an overall summary of the findings of the project. The two deans had already conferred with their participating faculty members, and the Academic Dean and the Director of Planning had conferred with their two deans prior to the administration of the questionnaire. Questions presented to the faculty were presented in Table 5.

Summary

The questions posed by the measurement instruments used provided the framework for the analysis and application of the data collected. Since a combination of data-gathering methods was used, the data were presented in narrative, tabular or graphic form, as was dictated by the data encountered. The data were analyzed to provide objective responses to questions posed in the study.

CHAPTER IV

RESULTS

This chapter provides information about perceptions and reactions to the Clinic process. Actual content of the Clinic process is provided in Appendices E, F and G. The results of the selection of the institution, schools and faculty members, as well as their reactions to the Clinic process itself, are incorporated into this chapter.

The three phases of this study generated data relating to the acceptability and potential adaptability of the teaching analysis process called the Clinic to Improve University Teaching. This process, designed in the United States, was now being tested in the professional Schools of Medicine and Dentistry at the University of Panama.

All data recorded in this chapter and in related appendices are based on the perceptions of the eight selected faculty members, the four administrators, and the 315 participating students. Data were gathered via interviews, observation, videotape and questionnaire. The questionnaires are described in Chapter II.

This chapter is divided into three phases. Phase I deals with the selection of the case institution and the decision to permit this study; Phase II deals with conferences with faculty members in order to provide them with an

overview of this study, as well as the rapport development between the researcher and these faculty members; and Phase III deals with the administration of the Clinic process, as well as the administration of the questionnaires.

Phase I

Part 1 - Selection of the institution. The researcher asked the President of the University of Panama by letter for permission to conduct a pilot study in instructional development at the University of Panama as part of a dissertation project. This letter was forwarded to the Academic Dean, Garcia Paredes, then the Acting President of the University of Panama. Dr. Paredes was receptive to the proposed study and invited the researcher to Panama for a meeting to discuss in detail the Clinic process. His letter of acceptance is found in Appendix .

Part 2 - Dissemination of the Clinic material. Prior to the researcher's visit to the University of Panama, the following material was forwarded to the Academic Dean: Annual Report, 1972-1973 to the W. K. Kellog Foundation The Clinic to Improve University Teaching, University of Massachusetts, Michael Melnik, Director, Dwight W. Allen, Principal Investigator; Clinic to Improve University Teaching: Working Definitions of Some Technical Skills of Teaching, Summer 1975. These are found in Appendix H.

Part 3 - Meetings and conferences with administrators. After arriving in Panama, a conference was arranged between the Academic Dean and the researcher. At the meeting, Dr. Garcia Paredes raised two areas of concern pertinent to this pilot study.

First, the rapid increase in the number of students and professors from 1969 to 1976 was creating problems for the University. In 1969, the University of Panama had a total of 8,000 students and 450 full- and part-time faculty members. Now, in 1976, the student body had increased to 38,000 students, and the teaching faculty numbered 1,200. Prior to 1976, the majority of the professors had been sent abroad to obtain graduate degrees. However, this had become a tremendous financial drain on the University's resources. Until 1960, emphasis had been placed on "knowing what to teach" while during the 1960's this had changed to "know how to teach." Now, the University found itself having to consider both aspects of instruction.

Until 1953, the University selection focus was concentrated on attracting faculty members who had subject expertise. After 1953 the University shifted its primary concern to faculty capability for efficient and effective transmission of knowledge. Therefore, University administrators were experimenting with different methods for

improving faculty instructional effectiveness. Although a wide range of audio-visual equipment had been purchased, this was not extensively used since the faculty members were not aware of its existence. This was of importance to the researcher, since the Clinic model incorporated several data-gathering techniques, one of them the videotape. Those faculty who knew of the equipment were unfamiliar with its effective use. Videotapes were not used at all, and overhead projectors were infrequently utilized. Slide presentations were the only medium used in large lecture settings in the professional schools.

Secondly, Garcia Paredes felt that the Latin American professor was more reserved than his North American counterpart and, therefore, less willing to admit or discuss deficiencies in teaching style. This appeared to be a particularly sensitive issue. An earlier attempt to discuss teaching style deficiencies with faculty members of the Philosophy and Education departments had generated substantial anxiety of the part of the professors. According to the Academic Dean, fear of use of a diagnostic instrument for the purpose of administrative decision-making was the principal cause for the failure of that attempt.

After a detailed outline of the Clinic to Improve University Teaching process, the Academic Dean felt that

this might be the appropriate instructional improvement vehicle for the University of Panama. He particularly noted that if professorial teaching skills could be improved, students would significantly benefit and the University would be able to reduce the inordinate numbers of failing students.

Garcia Paredes then arranged a meeting with the Director of Planning and his staff, who were in charge of faculty development at the University. A conference then took place with the Director of Planning, Orlando Sousa, and his two colleagues, José Landi, Academic Planning Consultant, and Pédro Sálazar, Academic Planner. At that meeting, three points were discussed: reasons for the researcher's visit to the University; overview of the dissertation project; and what would be involved if they participated in this project in terms of material, assistance and professor participation. During the conference, six issues emerged, either as concerns or as system questions.

First, the three administrators felt that they would like to omit some of the TABS questions, which had been forwarded to them by the Academic Dean. No consensus could be reached on which questions to omit; therefore the three administrators decided to let the participating schools decide on omissions. The reason for their desire

to modify the questionnaire was that they thought it was too long.

Second, the question of professor selection was discussed. They felt that two alternatives were viable: one, to select one professor from several of the different schools (voluntary participation), or two, to select all of participating faculty members from the same school, leaving the selection to the dean of that school. The decision was made that this issue would be discussed internally, and that the researcher would be informed of their decision.

Third, a discussion ensued on whether or not to select a professional school (Dentistry, Medicine, Law, Architecture, etc.) or a liberal arts or science school. The administrators stated that the students of the professional schools were rather passive, and this experiment would not rouse them to "create a Vietnam." Therefore, the decision was made to select one or several professional schools.

Fourth, matters relating to the providng of technical assistance, video personnel, duplication of material, lab and classroom assignment conducive to observation and videotaping were quickly and satisfactorily settled.

Fifth, an earlier attempt at instructional improvement had left the faculty members aware of their deficiencies as teachers. However, no attempt had ever been made to assist them in overcoming those problems. Even though

this pilot study did not intend to have long term follow-up to the diagnostic phase, it was agreed that at termination of the data collection phase, long term follow-up would be discussed with the President of the University or the Academic Dean.

Finally, a concern for the researcher's familiarity and knowledge of the Panamanian culture and thought processes emerged. The administrators were hesitant to risk the possibility of faculty alienation if cultural differences were not taken into account. This led to the discussion of mututal friends, family members, and lengthy stays in Panama which had provided the researcher with substantial insight into the Panamanian socioeconomic and cultural climate. This discussion reassured all three administrators.

The meeting ended with statements by the administrators that the administration was prepared to look at this model as a possible answer to several crucial problems such as the student dropout rate, and that their faculty were ready to receive assistance, since recent student protests had been extremely critical of them. The administrators felt with respect to the students that this model might "calm them down," if they felt that their opinions were being heard. Administrators also felt that the faculty would be shown that the administration was ready and

willing to help them in the development of their teaching skills.

Part 4 - Establishing the study. During this visit, the Academic Dean informed the researcher that the University would gladly participate in this program, and that they had selected the Schools of Medicine and Dentistry to participate in the study. Meetings with the Dental and Medical deans and selected faculty were arranged. Faculty members' profiles are found in Chapter III.

Phase II

Part 1 - Preliminary conferences with participating faculty. The Director of Planning arranged two conferences, one with the Dean of Medicine and his selected faculty, and the other with the Dean of Dentistry and his selected faculty. These meetings had two purposes: to personally meet the faculty members and their deans, and to give them an overview of why the researcher was there and what she wished to accomplish.

Prior to the researcher's visit to Panama, it was decided that the following topics were to be discussed in these preliminary meetings: the historical perspective of faculty development programs in the United States; the results of these changes and the different emerging programs (e.g., faculty development, instructional

development, organizational development); the use of student questionnaires; centers of pedagogical improvement; and the Clinic model.

After the successful completion of these 1½ hour meetings, the Dean of Medicine volunteered four faculty members: two because he felt they needed improvement and two because they had previously expressed interest in faculty development programs. The Dean of Dentistry, on the other hand, had decided that seven of his key men, as he so designated them, would attend this meeting. He himself first expressed the desire to participate as a subject in this study, and two of his faculty/administrators immediately expressed a wish to participate also. One faculty member, a non-dentist who taught at the school, very much wanted to participate, and it was decided that he would make up the fourth member of this team.

Part 2 - Rapport development. Individual meetings with these eight faculty members were arranged for the purpose of establishing personal rapport. This was particularly important since the researcher was a non-Panamanian outsider who, with the administration's support, would analyze their teaching skills and behaviors, strengths as well as weaknesses. From previous discussions with other faculty members, the researcher had perceived a mistrust to exist between the administration, "the Hill," and individual

department and faculty members. The researcher felt that it was imperative to establish a trust atmosphere for the collection of valid data. This was accomplished by a reiteration of the confidentiality of the findings. None of the data would be discussed on an individual basis with any administrator without the faculty member's specific permission.

From three to five hours were spent with each of the professors in the sample, during which the researcher collected pertinent course content material in order to better evauate the observed courses. With the assistance of these professors, several hours were spent learning the terminology and becoming familiar with the various lecture and laboratory courses.

One additional member of the dental team was to observe the process, due to his function in the school. Gabriel Ponce, a pedagogical consultant to the School of Dentistry, had previously worked with the Dean to design evaluation models, primarily examinations. He would participate in all the phases of the pilot study, except the localization stage and private consultations with each faculty member. At the end of the whole process, he would evaluate the model as to its feasibility for use and adaptability to this particular school.

Phase III

Part 1 - Initial interview. During the initial interview, the form, "Clinic to Improve University Teaching Course Information Form" (Appendix C), was completed. For all eight faculty members, it was the first time in their teaching careers that such information was desired at the beginning of the semester. Information regarding course objectives and evaluation procedures ranged from a several page handout which was given to the students, to no written information at all. As a result of questioning, some faculty members stated that in fact they did not know whether students knew the bases for academic evaluation or grading. Further discussion resulted in an agreement that the four participating faculty members who had not previously provided students with statement of course objectives would do so in the future.

The second part of the three hour interview was spent considering definitions of teaching skills and behaviors. The faculty members agreed that they understood these definitions (Appendix D), but they needed clarification of their relevance to this project. All except two faculty members had never had any pedagogical training in teaching skills and behaviors.

The third part of the initial interview was spent asking the eight faculty members to read over the questions

asked in the TABS questionnaire. They perceived no problems with these questions, and all agreed that they did not think their students would have problems completing the questionnaires. The only objection to an item was the use of "maestro" as the Spanish translation (from Mexico) of "professor." These faculty members felt that the word "maestro" was the professional title of an elementary school teacher, and that they were "profesores." We agreed, however, that the TABS questionnaire did not have to be reprinted.

The following is a summary of the eight individual initial interviews as they relate to the nature of this study.

Course 1 - Professor A - Orthodontics. This course met for one hour twice a week for a lecture/discussion group and one laboratory. The 39 students in the course were assigned alphabetical grades based on the laboratory work, quizzes and one final examination. The objectives of this course, according to its professor, were "to transmit to the student a series of scientific knowledge so that he/she later on can apply them when they meet their patients' needs and problems." This administrator/faculty member thought that all the presented TABS questions were relevant to dental instruction. Furthermore, he believed "the confidential nature of these student/faculty

perceptions to be essential in a teaching improvement model."

This professor thought that participating in this pilot study would be helpful to point out to him personal teaching strengths and weaknesses. Additionally, in conjunction with the other three faculty members, the study might give him and them insights into their own strengths. This information could be used in an organizational sense when assigning courses. He further explained that his, as well as his colleagues' training and background was that of a dentist, not a teacher, but that teaching was for many of them an avocation and a supplement to their income.

Course 2 - Professor N. - Law and Ethics in Odontology. This course met once a week for a two-hour session, part lecture and part seminar-type interaction and discussion. There were 30 students in their third year of dental school. As in the other classes, alphabetical grades were assigned. According to the instructor, the objective of this course was "to give the students a real grasp of the ambivalence of the legal and ethical issues in this profession."

During this interview this professor/administrator expressed concerns that the success or failure of the students is entirely determined by their grades, rather than their ability. At the beginning of his course he handed to all the students a course outline, containing not only

content information, but an exact overview of how their grades were to be attained.

Concerning the pilot study, and in particular the TABS questionnaire which was to be given to the students, he felt that all elements were of importance, not only to the faculty member, but to the student as well. He felt that "the whole process will be educational to studentsin that they will have to take at least partial ownership in their learning process."

Course 3 - Professor M. - Sociology and Human Relations. This course met once a week for two hours. Seventy-five dental assistance participated in this course. Grading was alphabetical, and an overview of the course and grade assignment was given to the students at the beginning of the course. The objective of the course, according to its professor, was that "they will know themselves better, and understand better their relationship with others."

This professor was the only non-dentist teaching at the School of Dentistry (he holds a B.A. and an advanced degree in social work). In regard to the TABS items, he felt confident that all items were relevant and easily understood by his students.

Course 4 - Professor S. - Pharmacology. This course met weekly for a one-hour lecture and had 10 additional

laboratories per semester plus one group project. Ninety-five third-year medical students are graded alphabetically. The objectives of this course, according to this administrator/faculty member, were "to familiarize the medical students with the importance this branch of pharmacy has in the preparation of the future pharmacologist and physician." At the beginning of the course, all students received a detailed descriptive handout of how the above objective was to be accomplished and how the grades were to be determined. A roster of all the teaching faculty in the School of Medicine, with title, name, position and academic degree, was attached. During this initial interview, this professor/administrator/physician said "I always wanted to teach, and I am particularly trying to change the attitude of the students as far as drugs and their effects are concerned, so that they as people will become more professional." She felt that even though the TABS questionnaire was "longer than any other I have ever seen," it would not present any problems to the students.

Course 5 - Professor F. - Prosthetics, Partial and Removable. Thirty-four third-year students met in this class for two lectures and one three-hour laboratory session per week. All grades were assigned by alphabet and, according to its professor, the object of this course was "to transmit materials to the student in a way which is

not boring."

At the beginning of this course, which was taught by a team of three specialists, the students were given general, abstract ideas of what the course was to accomplish and of how they would be evaluated. The researcher asked this particular professor if the three segments of the course, taught and evaluated each by a different professor, were totally integrated. He felt that there was no problem whatsoever, either in the construction or evaluation of the course material.

This professor termed himself an "authoritarian in the class," and expressed doubts that the students were capable of evaluating a professor. He felt that his role was "to teach them, and theirs to learn."

The researcher observed that it was only the fact that the Dean participated in this study which made this professor "volunteer" to be one of the subjects. He asserted strongly that no "unknown" would emerge, either in regard to his teaching skills, or the students' learning behavior.

Course 6 - Professor S. - Pharmacology. One hundred twenty students in their second year of medicine were in this combination lecture/laboratory course. Letter grades were assigned, and the course was taught by a number of

experts who functioned as a team. This professor did not term himself an educator and only taught because, as he put it, "I have to pay back the University for each year they have financed my education with two years of teaching." He felt that education was a "two-way communcation," and that the goal of this course was to "familiarize the students with the potential, possibilities and threats of drugs, and to make them more responsible human beings in their use." He was extremely apprehensive about participating in this pilot project, but most anxious to find out if he had any teaching skills. He felt that he had none.

Course 7 - Professor D. - Biochemistry. Seventy-five second-year dentistry students met in this lecture class for two one-hour lectures per week. The students were graded on the basis of three-part exams and one final exam, and an alphabetical grade was assigned to them.

This professor felt that "education would be more efficient if the students were assigned certain chapters of a book, and then, if they had questions, came to ask the professor." This person expressed grave reservations in regard to the validity of a teaching evaluation process where students had any input. In her opinion, "students were not capable of judging the pedagogical process." The researcher was informed also that she only participated in this pilot study because she had received a direct

order from her dean to do so. This was the most difficult client, since she believed only in pure abstract knowledge, and saw her role as the dispenser of that knowledge and the students' as the recipients of it.

Course 8 - Professor P. - Physiology. This class met for one hour each week for a lecture. These fourth-year medical students received alphabetical grades.

According to this professor, the stated objective of this course was to "try to make the student think; and I am to facilitate the learning process by making them aware of the benefits of physical exercise, of which they have to be aware as physicians. She saw her role as to "try to obtain the most in the available time of the information which interests them so that they will go afterwards and look and search for more themselves."

This professor had spent several years trying to integrate the roles of the physician and the educator. After examining the TABS questionnaire and the different teaching skills and behaviors examined in this model, she stated that "This questionnaire not only provides an opportunity to address specific aspects of my teaching in this course, but of my skills as an educator in general." She further mentioned that she was quite concerned about how well she and her colleagues teach. "We, as faculty members of the same discipline, do not exchange ideas and

information in regard to our teaching skills and behaviors. Evaluation, if it is used, serves only political purposes, and is used by the administrators. I think and hope that this study will prove that we not only need this type of intervention, but that can benefit the school as a whole."

Part 2 - Classroom observation. All of the School of Medicine faculty members had decided to use the lecture portion of their respective courses, with an average of 99 students per course, for the purpose of observation. Two faculty members, Professor A. and Professor N., decided to introduce the researcher as a researcher from the University of Massachusetts completing a dissertation who was working with them on this pilot project. They both outlined the process and asked their students to participate fully. The other two faculty members decided not to give an introduction at this time, preferring to wait until the collection of the TABS items and the videotaping.

All of the dentistry faculty members decided to introduce the researcher at the time of classroom observation, since they felt that, with an average of 35 students per class, the researcher's presence would be noticed immediately. They preferred to withhold the announcement to their students that the application of a model used for an assessment of their professor's teaching skills and

behaviors would be the subject of a dissertation project.

All eight faculty members were observed during a full class session, and the researcher noted particularly the teaching skills and behaviors which were practiced during these lectures. Appendix E contains a summary of the twenty teaching skills observed in the eight professors during class observation.

Part 3 - TABS. The questionnaire labeled TABS (Teaching Analysis by Students) used in this study was developed by the Clinic to Improve University Teaching at the University of Massachusetts. It requires the students as well as the faculty members to judge the overall effectiveness of 20 sets of individual behavioral skills which are further divided into 30 specific categories. Twelve additional questions (#39 - #50) provide the TABS analyst with relevant student information (see Appendix B).

The professor is asked to complete the faculty self-analysis form (self-assessment) based on the 20 skill categories, as well as to complete a separate student prediction form testing his/her skills of how well he/she predicts the students will evaluate those 20 skills (prediction). The students are asked to complete the same questionnaire, rating the professor's skills on a scale of 1 to 5 (1 = no improvement needed; 2 = little improvement needed; 3 = improvement needed; 4 = considerable

improvement needed; 5 = not applicable to this course). Ratings 1 and 2 are then termed strengths, and 3 and 4 weaknesses for the sake of later planning.

For the purpose of this study, as well as the session called localization, where the faculty member is presented with the findings of his teaching skills strengths and weaknesses, the researcher singled out the six skills the students rated as highest (1 and 2) which are labeled strengths, and the six skills the students rated lowest (3 and 4) which are labeled weaknesses. By adding the highest percentage of numbers 1 and 2, or 3 and 4, respectively, those strengths and weaknesses were determined. Faculty may choose to work on any of the skills.

The researcher then compared the faculty member's self-assessment rating with regard to these 12 questions. Furthermore, if the faculty member had a tendency to predict that his/her students rated him/her weak (3 or 4) on overall skills than was actually the case, it was indicated with the word "overpredicted."

In Appendix F is an overview of the six weakest and the six strongest skills according to student assessment, as well as the faculty members' self-assessments. Discrepancies between the students' and the faculty members' perceptions are noted.

Part 4 - Videotape. The classroom sessions were evaluated by systematic observation using one-minute taping sessions at five-minute intervals during a one-hour class. Total videotape per class averaged ten minutes. This method was used to analyze specific teaching skills and behaviors. In Appendix is a summary of the strongest and weakest skills observed and taped in the one-minute taping segments. Strengths, as in the TABS analysis, are classified to correspond to numbers 1 and 2, and weaknesses to numbers 3 and 4.

Part 5 - Localization. The results of the TABS questionanire were processed by computer and summarized and synthesized by the researcher. These data, as well as an analysis of the videotape and data collected from classroom observation, were prepared for review with the participating faculty member. During this session, the faculty member first viewed the videotape without interruption from the researcher. He/she then viewed the tape a second time with interruption at the end of each of the one-minute taped segments for an analysis of the teaching skill being practiced. The participating faculty members without exception approached the videotape feedback cautiously, since this had been the first time they had ever been taped in their classrooms. A general tendency by participants to search for negative factors was counteracted by the

researcher by pointing out strengths.

The second phase of the localization stage was the analysis of the TABS items, classroom observation, and videotape findings. The following are the results of the eight localization stage interviews with the subjects.

Professor A. This professor thought that this teaching analysis instrument was very helpful in that it did not only identify teaching strengths and problems, but also strengths regarding curriculum matter. For TABS item #34 (instructor's ability to relate the subject matter to other academic disciplines and real world situations), 78.8% of the students felt that "as a consequence of participating in this couse, my attitude towards the subject matter is becoming more positive." On item #42 (relevancy of the course in terms of the student's life), 95.8% of the students felt that the course was relevant.

Previous discussions among faculty members had apparently centered on which of the medical courses were pertinent to the students' professional development, since students had protested earlier that the curriculum offered was not significant to the development of their careers. This professor's conclusion was important to the researcher. The professor believed, not only as a teacher, but as an administrator, that teaching competency not only had a bearing on instructional matters, but that it might

influence instructional development as well. He stated that this type of analytical instrument, by leading from the former to the latter, was especially relevant to this institution.

Furthermore, this professor expressed his feelings regarding his participation in this study by saying "It has made me more aware of the students' abilities to judge and behave as adults. They are willing and able to be responsible as far as their own learning process is concerned." He did not wish to single out any particular area to work on, since he was in general confident that he knew how to teach, and that his students could learn with his teaching style.

Professor B. Three hours were spent with this professor discussing the summary of the data. During that discussion, she explained that one of her frustrations was that "students were no longer what they used to be. In the old times, the students were good, smart, well behaved, from known families. Now, with the composition of the access to higher education changing, these students are not capable, prepared and able to study these complex professional courses."

When we discussed the discrepancies between hers and the students' assessment of teaching strengths and weaknesses, in particular #32 (the instructor's maintenance of

an atmosphere which actively encourages learning) and #37 (the instructor's performance in helping explore the relationship between personal values and course content), she dismissed the students' opinions as invalid. "They are not capable of judging."

We agreed, however, that #25 (ability to use a variety of teaching techniques) and #26 (demonstration of creativity in teaching methods) were areas which could be improved upon, and that she could participate in some courses which the University's School of Education might offer in the use of visual aids.

Overall, this interview was a difficult one in that the subject, although she had originally agreed to participate, was reluctant to discuss the results. Contrary to her stated interest earlier in the study, she now believed the study as such could provide little insight into her teaching skills. However, she concluded that maybe overall, for the professors in general, it might be an acceptable model.

Professor C. From the beginning of the pilot study, this professor was enthusiastic about the possibility of finding an objective way to single out specific teaching strengths and weaknesses, through this teaching skills and behavior assessment model. She had perceived her students to be responsible and willing to learn. The discussion of

the videotapes, TABS, and classroom observation items reinforced that belief. She felt that all of the assessment methods were relevant to the medical faculty members, since "they not only test specific aspects of teaching in this course, but general teaching skills." She, like her colleagues, had had no previous teacher training, and had "taught the way our teachers taught us."

The researcher and this professor agreed that after the study concluded on a formal basis, the researcher would continue to work with the professor by sending her materials which addressed her teaching weaknesses. Items that were singled out to be worked on included #11 (ability to ask easily understood questions), #19 (explanation of precisely how performance is to be evaluated), #20 (ability to design evaluation procedures which are consistent with course objectives), and #21 (performance in periodically informing students of their progress). This professor expressed a strong desire to keep this type of assessment model and to integrate it into the whole Medical School.

Professor D. This localization interview focused on the professor's weakness in teaching skills from the students' viewpoints, since there seemed to be little agreement on this matter. Discussions revealed that this professor was completely unfamiliar with such concepts as

teaching skills or learning patterns. He had no confidence in his teaching ability and considered it a burden to "be endured" for eight years. (He was required to repay the state for the financing of his education at a rate of two years of teaching for each year of study.) He did not consider teaching to be his profession, and preferred pure research. The areas of setting evaluation standards (#36, #37), method and material variety (#24, #25), and value context (#37, #38), were singled out for improvement.

The researcher agreed to send available material on evaluation after the conclusion of this study. The professor was to contact the School of Education for help in the area of material variety. He further planned to ask his "boss" (Professor A) to help him integrate this course into the other parts of this team teaching project.

Overall, this professor perceived the Clinic to Improve University Teaching process to be valuable to professors like him, and expressed a wish that it be available to the medical faculty. However, he raised an issue concerning the administration of such a program. He believed that a third, neutral party (neither professors nor administrators) should administer it. Only if the specialists were from "the outside" would the faculty feel free to "expose their weaknesses" and seek help to overcome them.

Professor E. This professor, during the localization stage, expressed a concern for his perceived weaknesses, especially his overassessment of items #5 (ability to maintain a clear relationship between course content and course objectives), #9 (ability to clarify material which needs elaboration), #11 (ability to answer questions clearly and concisely) and #17 (ability to wrap things up before moving on to a new topic). He felt that he was an "expert teacher," and was totally surprised that his students did not appear to agree with him. The viewing of the videotapes, however, identified to his satisfaction why the students responded as they did on the TABS questionnaire.

He agreed that he wanted to work on items #5, #9, #11 and #13, and the researcher agreed to send him information on the skill area of asking and answering questions, after the termination of the pilot project. Even though he had voluntarily taken part in this study, he was reluctant to accept the results of the TABS questionnaire as valid information. However, he believed that the classroom observation information and the videotapes were quite helpful in clarifying the presence or absence of certain skills.

Professor F. This professor perceived himself to be an excellent educator, totally in tune with his students.

The TABS analysis showed an extraordinarily high rating of strengths as perceived by the students. However, they also revealed a serious discrepancy between his perceived weaknesses and those his students considered to be areas needing improvement. The videotapes clarified some of the discrepancies between his and their perceptions on item #29 (ability to take appropriate action when students appear to be bored). An intensively negative body language, not perceived by the professor as negative prior to the viewing of the videotape, seemed to be partially able to explain this discrepancy. He felt, after examining the videotape and the results of the TABS questionnaire that the different parts of the analysis instrument were valid, integrated and, as a whole, gave a fairly exact picture of his teaching skill strengths and weaknesses. He asked that any material dealing with closure and evaluation be sent to him after completion of the pilot study.

Professor G. This administrator/professor was overwhelmed after viewing the videotape, and felt himself to be a total failure. Previous analysis of the TABS items had shown a consistent underevaluation (as demonstrated by the table in Appendix F). Only a systematic analysis of every segment of the videotape brought his substantial teaching strengths, of which he had not been aware.

Prior to this study, several discussions had taken place among administrators, teachers and third-year dental students regarding evaluation. Since the TABS questionnaire highlighted this issue again, this professor was quite convinced that it not only had validity with respect to his personal skills and behaviors, but that it brought institutional problems to light also. He suggested that this model might be very helpful not only in assessing individual professors' strengths and weaknesses, but that it could be used to identify particular strengths or weaknesses of a teaching system. He further indicated that the combination of all the Clinic process items provided useful information on how a particular professor "behaves" in any given type of course, be it lecture, seminar or laboratory. Information of this type, he stated, would be valuable in determining assignments of professors among these types of courses.

Since his localization centered on the subject of evaluation (precise explanation of performance evaluation, design of evaluation consistent with course objectives, periodic information on progress), he indicated that this particular model not only pointed out this weak area, but also gave a specific skill which could be improved upon if so desired. This one item was of great importance to him since he felt that his model gave him and his colleagues an understanding of how to improve. This stage

terminated with the discussion that he wanted to proceed to develop a systematic program integrating this system with his faculty (school).

Professor H. This professor, the only non-medical professional observed during this pilot project in the professional schools, was very apprehensive during the localization stage. He expressed doubts in regard to the validity of the students' ratings of his teaching strengths. Only a systematic evaluation of all the TABS items, as well as the viewing of the videotape and a discussion of the findings of the researcher's classroom observation, convinced him that he possessed great teaching skills, and that his students agreed, as their TABS responses indicated.

He was most concerned that this type of information not be forwarded to the administration, since apparently he had a deep mistrust of both the internal and external methods of professor evaluation. He concluded, however, that this model accurately reflected his strengths and weaknesses not only in the observed course, but of his skills in general. We agreed that meterials relating to pacing, logical organization and evaluation would be forwarded to him after the completion of the pilot study.

Student questionnaire. The researcher asked all participating faculty members for permission to administer a

student questionnaire to the students participating in the eight observed classes. The purpose of this questionnaire was to determine if the students found this type of questionnaire (i.e., TABS) to be appropriate to their learning situations, and to elicit their opinions as to the faculty evaluation questionnaire and its length. The following five questions were asked:

1. Do you think that this questionnaire is useful for your professors and why?
2. Which are the five most important questions and why?
3. Which are the five least important questions and why?
4. Do you think that any other questions should be added to this questionnaire, and what type of question?
5. Do you think that this type of questionnaire is very short, very long, or just fine?

Table 6 shows the results of this questionnaire. The total number of students responding to each question is indicated, as well as the question number in rank, the question itself, the number of students responding and their percentages. It appears from the students' responses to the questionnaire that the majority (89%) agree that their professors could benefit from this type of an

Table 6

Responses to Student Questionnaire

Question 1: Do you think that this questionnaire is useful to your professors and why?

Total responses: 112

Response	Number	Percent
Yes	96	86
No	3	2.6
Qualified yes	3	2.6
Other no	10	9

All of the responses answering the "why" dealt with the issue of the professor's teaching. These are found in Appendix .

Question 2: Which are the five most important questions and why?

Total responses: 111

Rank	Question	Number	Percent
1	#3	40	36.0
2	#9	35	31.5
3	#10	35	31.5
4	#32	32	28.8
5	#13	29	26.0

Table 6 (Continued)

Question 3: Which are the five least important questions and why?

Total responses: 78

Rank	Question	Number	Percent
1	#20	15	19.2
2	#23	14	17.9
3	#39	13	16.7
4	#35	13	16.7
5	#37	12	15.4

Question 4: Do you think that any other questions should be added to this questionnaire, and what type of question?

Total responses: 116

Response	Number	Percent
Add	32	27.6
Do not add	84	72.4

Summary of types of questions which students felt should be added:

1. Personal problems, questions
2. Is he good at testing?
3. Interaction between students and teachers
4. Body language

Table 6 (Continued)

5. Human relations
6. impartial evaluation
7. Emotional state (students and teachers)
8. Personal and psychological relationship
9. Sexual education
10. Career development
11. Should the professor be a friend of the student?
12. Students' expectations of the professor (as a human being)
12. Professor's attitudes

Question 5: Do you think that this type of questionnaire is very short, very long, or just fine?

Total responses: 112

Response	Number	Percent
long	19	17
short	5	4.5
right	88	78.6

assessment tool. They concluded that they are able to judge accurately their teaching skills and, therefore, provide feedback of what the students believe to be the professors' teaching strengths and weaknesses.

The questions relating to the individual teacher's ability to arouse the students' interest when introducing instructional activity (establishing a learning set); the ability to clarify material which needs elaboration (elaboration); the instructor's speaking skills (expression); the ability to answer questions clearly and concisely (responding to questions); and the maintenance of an atmosphere which actively encourages learning were the most important elements from the students' viewpoints.

The least important questions were those relative to the sex of the student; class information (background material); the ability to select materials and activities which are not too difficult (level of challenge); and the instructor's performance in helping the student explore the relationship between his/her personal values and the course content (value context). The conclusions drawn from these results, as well as the type of questions the students recommended for incorporation into an assessment questionnaire, are presented in Chapter V.

Faculty questionnaire. A questionnaire asking six open-ended questions was administered in a separate session by

the researcher. The purpose of this questionnaire was to determine if the faculty members considered this teaching improvement model acceptable to them as faculty members, and what, if any, modifications had to be made. The following are the six questions and the faculty members' responses.

1. Is this model (Clinic to Improve University Teaching) generally acceptable to you?
2. What kind of modifications will have to be made (if any) so that it will be beneficial in this University's setting?
3. What are the strengths of this model in a Latin environment?
4. What are the weaknesses of this model in this environment?
5. What will have to be changed to fit this culture?
6. Do you believe that we (the University of Panama's Dental or Medical School) should adopt this model?

The following are categories of responses from the eight participating faculty members' quotes. Some faculty members gave more than one response, and some responses were given by more than one faculty member.

Question 1: Is this model (Clinic to Improve University Teaching) generally acceptable to you?

1. I believe that it is acceptable because it informs us of many of our teaching habits which we think

are OK, and now we know they are alright, or we know that we have to change others.

2. Yes, it is totally acceptable, the way it stands.
3. Yes, it is acceptable, but only will be functional if used by all faculty members.
4. It is acceptable since we are familiar with criticism only as a destructive element, and we are not used to thinking of criticism as positive. This model teaches us the latter.
5. Yes, it is acceptable. It serves as a mirror and we can see.

Question 2: What kind of modifications will have to be made (if any) so that it will be beneficial in this University's setting?

1. Specific orientation towards subject matter (medicine or dentistry).
2. Within the specific steps, no modification is necessary.
3. Delete all questions after question #30 (see Appendix B), since they are too subjective and therefore, the results doubtful.
4. For the team teaching courses, design additional questions dealing with integration.
5. Expand the initial interview session to two or three sessions, explaining in detail what teaching

skills are and how the faculty member will be evaluated. In this setting, the faculty members will have to develop a trust relationship with the administrator of this process if the faculty member is going to benefit from it.

6. We are afriad to open up to some outsider, therefore, take time establishing a comfrot zone.
7. Before going to the initial interview stage, hold a session on background to the process of teaching improvement, its history and results.
8. Use feedback sessions to each faculty member during the initial stages of the process, so that he/she can start a change process.

Question 3: What are the strengths of this model in a Latin environment?

1. Video: we can see for ourselves.
2. Asking the students for input, therefore their participation in the learning process. This motivates him/her.
3. Video, and the consultant who help us analyze it according to our strengths and weaknesses (emphasis on strengths).
4. The first 30 questions.
5. The TABS questionnaire: it showed us the specific items we do well on, as well as the ones in which

we need improvement.

6. TABS questions on evaluation: the students should know the objectives of the course and his/her way of being evaluated. These questions force the issue.
7. It generates faculty interest to improve themselves because it gives them specifics to improve upon.
8. This model also evaluates the professor, and the others (known to the professor) only evaluate the students.
9. Most of the faculty have studied for their medical degrees in the U.S., and, therefore, that country has prestige. This model, coming from the U.S., can benefit from the same type of positive attitude transferral.
10. The Video: it shows us certain facets of an overall process.
11. It is practical and applicable, and all the separate elements of the model (interview, observation, questionnaire, video) interrelate without contradicting results.

Question 4: What are the weaknesses of this model in this environment?

1. Videotaping: the students and the professors

are not used to this and, therefore, are apprehensive. The results may not be typical of a "normal" classroom situation.

2. Initial interview: it is presented against a background of total ignorance. Should have additional sessions, on what the total process tries to accomplish and how the achievement of the results is going to be measured.
3. No weaknesses in the total system.
4. Too many TABS questions, the students lose interest.
5. Students as well as teachers need orientation to the TABS questionnaire. We do not understand the reasons for some of the questions.
6. Lend more time and attention to the students during the process.

Question 5: What will have to be changed to fit this culture?

1. Make use of group pressure by selecting the most influential faculty members to go through the program. This also might help a weak faculty to "dare" to go through it.
2. Have one of our "own" people become the consultant, or some third party, and no one from the administration. Only this way will be able to be open.

Question 6: Do you believe that we (the University of Panama's Dental or Medical School) should adopt this model? Of the eight faculty members, seven said they believed they should; one said they should not.

Feedback sessions to the Schools of Medicine and Dentistry. After completion of all the stages of the model, Clinic to Improve University Teaching, as well as the completion of the data collection of the student and faculty questionnaires, separate interviews were held with the Deans of Medicine and Dentistry.

Both deans, after that closing interview, asked the researcher to hold an open meeting for all faculty in their respective schools to hear a summary of the pilot study, and a preliminary summary of what the researcher had encountered during the data collection, as well as a description of the general results.

In Appendix G is a summary of the finds which were presented to the two schools. The School of Dentistry requested that information only pertinent to student-faculty interaction be presented. The School of Medicine asked that an overall assessment of the professors' and the students' comments as well as results be communicated.

Administrative questionnaire. Prior to the exit interview, the Deans of Medicine and Dentistry, the Academic Dean and

the Director of Planning were given an overall summary of the findings of the project. The two deans had already conferred with their participating faculty members, and the Academic Dean and the Director of Planning had conferred with their two deans prior to the administration of this questionnaire. The following are the five open-ended questions given to these administrators.

1. What type of faculty development programs have been used in this University?
2. What type of program would you like to establish?
3. Do you think that the Clinic to Improve University Teaching model could be used by
    a) specific schools
    b) the whole University
4. The Clinic process: What type of comments regarding
    a) strengths
    b) weaknesses
    c) adaptations
5. What type of followup do you perceive to be appropriate?
    a) Bring educational consultant to Panama
    b) Send individuals to the U.S. to be trained
    c) Other

The following are their comments regarding this

questionnaire.

Question 1: What type of faculty development programs have been used in this University? In the past the only programs which were actively employed were those in which faculty members from the Schools of Humanities and Education held workshops on pedagogy (theory). The faculty members participating in these workshops were made aware of the trends in those areas and of their own deficiencies in terms of pedagogical skills and training. These faculty members then consulted with each of the various schools, but did so in addition to their other duties, during weekends and evenings. Several faculty members had participated in a one-week workshop in Mexico, and had returned eager to redesign their schools' curricula or evaluation systems. Since these attempts met with resistence, they became inactive and the workshop benefits were not transmitted to others.

Question 2: What type of program would you like to establish? There was agreement that if a program were to be established in conjunction with the existing efforts, the following items would have to be part of that program, since they were perceived needs of the professors:

1. Designing of examinations
2. Teaching skills and behavior training
3. Specifics in how to teach (up to this point,

faculty were only told how not to teach)

4. A permanent group of specialists, with a continuing program, not in addition to other teaching duties, but as a total commitment
5. Use of, and instruction in the use of, the University's audio-visual facilities.

Question 3: Do you think that the Clinic to Improve University Teaching model could be used by a) specific schools; b) the whole University? There was no consensus on how best to use this type of improvement model: as a central office, or as mini-centers in all or selected schools. The two deans strongly felt that they would like to have this type of service within their schools, tailored to the special nature of their faculty (professionals) and subject matter. The Academic Dean, however, felt that it should be a central office, with a core of specialists who could then be utilized by the different schools in accordance with need. Another factor which emerged in this discussion was that in order to have the necessary impact, the program's authority would have to derive from the administration (central location).

The general agreement, reached as a compromise, was for a central office, with professional educators, who then would train selected personnel in the separate schools to administer the process within that school. They further

concluded that the model would be used initially in the smaller schools, particularly the most recently established ones such as the Dental School, where the faculty would be more receptive to change.

Question 4: The Clinic process: What type of comments regarding a) strengths; b) weaknesses; c) adaptations? There was consensus that, at the outset of the program, the administrators were skeptical of the Latin professor's willingness to risk evaluative discussions with an outsider and especially a probe for weaknesses in his/her skills and behaviors. All of the participating administrators agreed, however, that from the feedback they had received from their faculty members, this skepticism was not warranted.

The School of Dentistry was "ready to adopt this model as it stands," and was not concerned about adapting the questionnaire to fit the school's special needs. They felt that their professors were receptive to change at that time and that at a later date they could determine what had to be altered. They furthermore concluded that each of their professors should be required to undergo this process at the beginning of his/her teaching career and once at five-year intervals. They identified as the Clinic's strongest point systematic followup to the diagnostic procedure and indicated that this was necessary

for their professors.

Question 5: What type of followup do you perceive to be appropriate? a) bring educational consultant to Panama; b) send individuals to the U.S. to be trained; c) other. A question was raised as to who would finance the installation of these pedagogical specialists within the selected professional schools, as well as the training of the center's personnel. The Academic Dean and the Director of Planning agreed that the most viable alternative would be for an outside consultant to come to the University to train their people to become proficient in the Clinic process. Since they felt that the Clinic to Improve Univeristy Teaching model was "palatable and acceptable," the major concern would be the background, training and personality of the consultant who would train their people. They recommended that the researcher present a proposal to the administration of how to establish such a program, including time lines and costs. Further, they recommended that the Director of Planning, in conjunction with the Dean of Dentistry (who wanted to adopt this model as soon as possible), evaluate it and make recommendations to the "Consejo Academico" (Academic Council), of which the deans of Medicine and Dentistry were members. This administrative body then would evaluate the proposal and make recommendations to the President

regarding its funding.

Summary

This study was designed to determine the acceptability and potential adaptability of the Clinic to Improve University Teaching process at the Dental and Medical Schools of the University of Panama. The conclusions that the researcher drew from each phase of the study are reported in Chapter V. From these conclusions, recommendations were made regarding future research in the development of an acceptable teaching analysis model for these schools.

C H A P T E R V

CONCLUSIONS AND RECOMMENDATIONS

The main focus of this study was to determine the acceptability and potential adaptability of the teaching improvement model called the Clinic to Improve University Teaching at the Schools of Medicine and Dentistry at the University of Panama.

The following four research questions served as the basis for this study:

1. Will administrators of a Latin American university permit deans and faculty members to mutually explore a systematic approach towards a process for instructional development?
2. Are Latin American professors willing to look at themselves as educators, with pedagogical strengths and weaknesses, and are they receptive to student evaluations of their teaching skills and behaviors?
3. Are Latin American students willing to accept responsibility to analyze their professors' teaching skills and behaviors as part of an instructional development process?
4. Is the Clinic process acceptable to faculty members in an educational setting outside that for

which is was designed, and what aspects of this process, if any, will have to be modified to make it effective?

In order to accomplish this, the Clinic process through the localization stage was given a pilot test in the Schools of Medicine and Dentistry, involving eight faculty members at that institution. Data were collected on the results of the study and on responses to the study of the four administrators, 315 students and eight faculty members participating in the study. Methods employed included videotapes, observation, interviews and a questionnaire labeled TABS. Furthermore, specific questionnaires were designed and administered to ascertain 1) whether or not the students responded positively to the TABS questionnaire as part of an evaluation of professors' teaching skills and behaviors; 2) the faculty members' receptivity to students' evaluations of their teaching skills, through a questionnaire designed for this purpose; and 3) if administrators were supportive of faculty members who were willing to explore a system to help them improve their teaching skills.

Analysis of the videotapes was completed with a focus on teaching skills examined in the teaching improvement process called the Clinic to Improve University Teaching. The investigator taped one-minute segments at five-minute

intervals during the one-hour class sessions which served as the objects of observation.

Conclusions from interviews and observations held with all those who were videotaped, as well as specific interviews with the Dean of Medicine and the Dean of Dentistry, were summarized from notes taken as they proceeded. The two lectures to the medical and dental faculty members at the conclusion of the pilot study were summarized in the preceding chapter. The questionnaires given to the eight participating faculty members and their participating students, as well as to the participating administrators, were analyzed using a summary of comments made to the open-ended questions posed in these questionnaires.

The interruptions and inconveniences, especially those dealing with the videotaping for the study, were very well received by the professors and students. The administrators were most willing to provide any assistance with materials, scheduling and staff. Without such cooperation of the faculty members, students and administrators, this study could not have been completed.

In general, the results of the study were very encouraging. While the results led to the specific conclusions described below, there were a number of isolated instances of excellent medical/dental teaching, where students found their professors to be not only excellent

professors of subject knowledge, but first-class teachers as well. Moreover, without exception, there was much interest on the part of the participating faculty members not only to examine their teaching skills, but also to make improvements indicated by the conclusions from the data. The administrators were most enthusiastic to have found their selected faculty members willing and ready to examine and improve their teaching skills, and were therefore willing to evaluate the cost of implementing such a process at their institution.

Conclusions

This section is organized around each of the four research questions, which are considered in turn.

Research question #1: Will administrators of a Latin American university permit deans and faculty members to mutually explore a systematic approach towards of process for instructional development? On the basis of the four involved administrators' responses during interviews and as a result of the questionnaire administered to these administrators, we find that administrators of the University of Panama will permit deans and faculty members to mutually explore a systematic approach towards a process for instructional development. The following served as a

basis for this conclusion.

Without exception, the administrators and the participating faculty members were willing and did explore teaching skills and behaviors through the process called the Clinic to Improve University Teaching, as evidenced by their participation in the clinic process.

The administrators' concern that the Latin American professor would be more reserved that his North American counterpart and therefore less willing to admit or discuss deficiencies in teaching styles and behaviors, was not warranted. After repeatedly stressing that all personal data would only be discussed with administrators with the permission of the faculty member involved, seven of eight faculty members were not reluctant to discuss weaknesses and admit deficiencies in their pedagogical competencies. Comments during interviews and responses to the questionnaire indicated to the researcher that if such a model were utilized at this institution, it would be accepted by the faculty members if it were not connected with the administration, and were only used internally.

Administrators were surprised at the positive feedback from the participating faculty members, and they realized that these professors were willing to invest time and effort towards their professional pedagogical development. It was hoped that in the future this might

improve the quality of teaching, which, together with positive student interaction, might help retain a larger proportion of the student population by reducing the number of failing students.

There were several instances where the participating administrator felt that knowledge of a professor's particular educational strengths was helpful in assigning a certain course. Individual preferences and strengths of a given faculty members, such as lecturing or small discussion leadership, could be taken into account and therefore the impact of the course could be strengthened. One dean in particular felt that the resulting knowledge of this particular teaching improvement process might lead to instructional development and change.

The Panamanian medical and dental professors, in their role as educators, had not received specific training. Apart from the role of the "disburser of knowledge," their function had not been defined (by the administrators of their particular school) in terms of the overall educational impact on their students and their professional careers. What was attempted and actually accomplished in their pedagogical roles in terms of course objectives and achievement, was determined largely by the personal and professional judgment of each professor. There was no clearly articulated process through which the school's objectives

and the course objectives were correlated, and the students had no definite knowledge of how their progress was to be evaluated. The role of the two academic deans (medical and dental) vis a vis that of the professors appeared to be as ambiguous as that of the professors in terms of fulfilling the objectives of the university. The deans served only as administrators. This ambiguity seemed to be increased by a lack of trust between faculty members and the administrators. Faculty members were uneasy about the role of the administrators in regard to their teaching careers, since they felt that the administrators would look at the revelation of teaching weaknesses as a way to eliminate the professor.

Research question #2: Are Latin American professors willing to look at themselves as educators, with pedagogical strengths and weaknesses, and are they receptive to student evaluations of their teaching skills and behaviors? On the basis of the eight medical and dental faculty member's responses to the Clinic process and the questionnaire administered at the end of the process, we find that the participating professors were willing to look at themselves as educators, with pedagogical strengths and weaknesses, and are receptive to student evaluations of their teaching skills and behaviors. The following lead to this conclusion.

The eight participating faculty members, with the

exception of one, were receptive to students' evaluations of their teaching skills and behaviors. This was evident by their acceptance of their discovery of their pedagogical strengths and weaknesses, resulting from the TABS analysis.

Professors voiced their interest in teaching and their desire to become more effective teachers. In several instances, changes in classroom teaching behavior were made immediately after the localization interviews.

There was indication that the participating professors were very willing and receptive to the idea of an analytical process which would "show" them--as did the videotape --their pedagogical behaviors and skills, as practiced in the classroom and the laboratory. This was a most welcome idea, since up to that point in time, no teaching improvement model had made use of this instrument.

As none of the participating faculty members had had specific training as educators, this model helped them to "see" themselves, through the use of video and the TABS questionnaire, as educators rather than as physicians or dentists. This was done by emphasizing the existence and importance of specific skills and behaviors as teachers. As subjects, they could therefore accept the fact that the possession of these skills enhanced their effectiveness as educators while an absence of them obstructed this effort. Especially with the novice professors, the knowledge that

these skills could be obtained, refined and practiced as independent, separate entities, gave them confidence.

As expressed during the localization stage, and in response to the faculty questionnaire, the professors from the Schools of Medicine and Dentistry, not having received training as educators, were enthusiastic and ready to accept this model for the following reasons:

1. It gave them an accurate assessment through the use of different data collection methods of their teaching skills and behaviors.
2. It gave them specifics on where they were strong and weak as educators in the use of teaching skills, which was entirely separate from their competency in their field. This separation of subject matter, professional competency and teaching competency, enabled them to admit to deficiencies without the threat of being labeled "deficient" in the subject knowledge.
3. Due to the personal treatment and the emphasis on human interaction between the investigator and the subjects, these physicians and dentists could relate on a one-to-one basis, a skill they employed in their doctor-client relationships. By ensuring confidentiality of the "discoveries," this level of comfort was achieved, since the same

elements were present in their professional relationships.

Research question #3: Are Latin American students willing to accept responsibility to analyze their professors' teaching skills and behaviors as part of an instructional development process? As evidenced by the student responses to the student questionnaire and by their willingness to complete the TABS questionnaire, we found that the participating students were willing to accept responsibility to analyze the teaching skills and behaviors of their professors as part of an instructional development process. The Panamanian medical and dental students were not only willing, but as 86% of the responses indicated, were very enthusiastic for a chance to analyze their professors' teaching strengths and weaknesses for the purpose of providing their teachers with opinions as to their effectiveness as teachers.

The majority (86%) of participating students felt that their professors could benefit from this model. Their being able to contribute information into the whole process was exciting to them insofar as it allowed them active participation. The rest of the educational process was limited, to a great extent, to a one-way communication process, with the students being the receivers and the professors the dispensers of information. As their

responses indicated, they felt that this model, however, did give them the feeling of taking part in the whole process, and therefore resulted in a higher activity level, as evidenced by their eager participation, which could be taken advantage of by the faculty.

Teaching was often simply a transmission of medical information and "book knowledge." There was little stress on other skill development, such as the human relation skills of physician/dentist-patient relationship. Students perceived this to be a weakness in the design of the curriculum. As 27% of them indicated in their responses to the student questionnaire, they would welcome such an addition to their career development skills.

Research question #4: Is the clinic process acceptable to faculty members in an educational setting outside that for which is was designed, and what aspects of this process, if any, will have to be modified to make it effective? As evidenced by comments during the localization stage and the responses to the faculty questionnaire, we find that the Clinic to Improve University Teaching is a suitable model and can be modified to work in a Latin American country, Panama.

This particular model, through the use of videotape, detailed analysis of skills and behaviors as presented by the TABS questionnaire and the classroom observation by

the researcher, was accepted by seven of the eight professors, as evidenced in their faculty questionnaire responses. They perceived the overall data conclusions aided them in their efforts to improve their skills. Up to this point, other models or discussions had only pointed out to them what they did wrong and where they were not efficient teachers. This model they felt was positive, since it outlined not only weaknesses, but strengths.

The one area of "instructor evaluation" was revealed to be an area of considerable concern to the students, the professors and the administrators. That this concern existed before the pilot study was conducted, and that one of the results of the localization stage was the emergence of this topic as an overall problem area through the use of the TABS questionniare, confirmed in the professors and administrators the belief that this model could be used at their institution. Since the TABS questionnaire highlighted which specific areas within this overall concern were problem areas and resulting discussions started to focus on the improvement of the existing state of affairs, several faculty members stated to the researcher that they had started to change their methods of evalulation and their methods of communication to the students about this subject.

The reemergence of a specific problem area (known to

the professors and administrators prior to this pilot study) through the use of the TABS questionnaire, convinced the deans that this questionnaire was not only valid in pinpointing professors' teaching strengths and weaknesses, but also brought to light institutional problems in cirriculum content and evaluation. Therefore, the conclusion was made by the Dental Dean and the Director of Planning that this particular model, if evaluated in total, might not only give insight into their faculty members' skills, but also point out weaknesses or strengths of an educational setting.

The majority of the Panamanian professors (75%) had received part of all of their graduate training in the United States and had high regard for this country's technology and reserach. This positive attitude probably facilitated the acceptance of a U.S. designed teaching improvement model. The researcher, however, has reservations about generalizing this fact, and believes that if the participating professors had either not been familiar with North American ways of teaching and training, or had not had the high regard for our research and technology, the outcome of the pilot study might have been entirely different.

One area where the Clinic model was not fulfilling all the requirements and needs of this particular pilot test

situation, was in the area of establishing a personal relationship at the very beginning of the program. The one interview in which the researcher collected data about the professor and his/her course and established a rapport, was not sufficient to do this. It is possible, however, that this occurred due to the nature of these professors' specializations as physicians and dentists, where the establishment of this rapport is part of the treatment. Faculty members expressed great concern about an in-depth explanation of the process, especially the diagnostic procedure and analysis techniques. From the interviews and the questionnaires the researcher came to the conclusion that this aspect of the process would have to be modified if it were to obtain the desired results.

A thorough knowledge of the Panamanian culture, life style and language were important factors in the establishment of a rapport between the faculty member and the researcher. Furthermore, the administrators' confidence was gained as far as an outsider could gain such confidence, through family ties with the country.

All the professors were selected by their two respective deans, however, either by inviting them to the first conference or by specifically selecting them to participate in this study. Thus, the sample professor and student population's reaction and positive endorsement

of this type of faculty development program might not be characteristic of the total faculty and student body at the University of Panama. Also, since the researcher was told that the selection of these professional schools of Medicine and Dentistry was made on the basis of the administration's assessment of these students as the "passive type," not prone to rebellion, the student responses also might not be typical of the whole student body.

Recommendations for Followup in Panama

Recommendations made as a result of the study are listed below. Those marked with an asterisk are the ones which were also suggested by the deans or the Director of Planning during interviews and as responses to the questionnaire.

It is recommended that:

1.* Specific definitions and outlines of evaluation methods for faculty members be designed. This should be accomplished through a joint effort of the dean of the school, together with his/her faculty members, to ensure that the University's objectives are met. As a second stage, if there are team teaching courses, each of the participating faculty members should review the preceding material and the following, and design the

objectives of the total course and how they will achieve them. Third, all students should be given at the beginning of a semester a written outline of what will be accomplished in the course, with specifics on how they will be tested and grade assignment made.

2.* Educational objectives be defined at the onset of a physician's or dentist's teaching career, and that "new" faculty members take part in an ongoing systematic model which would identify their teaching strengths or weaknesses and help them to overcome the latter through the assistance of an educational consultant.

3.* A teacher training program for physicians and dentists be developed to include broad components such as University missions and objectives, small group instruction techniques, design of evaluation methods, use of audiovisual aids and group dynamics.

4.* The Clinic to Improve University Teaching model be used, with questions in the TABS questionnaire pertaining to specific skills and topics taught in these professional schools, in order to identify specific strengths and weaknesses so that improvement strategies can be developed directed

at the discovered weaknesses, and methods and procedures to check and evaluate the progress made over a period of time.

5. The TABS questionnaire be translated idiomatically rather than literally, to reflect the subjects' use of language.

6. Specific emphasis be placed on creating a trust relationship between the educational consultant and the participating professors, by including separate sessions at the beginning of the Clinic process dealing with topics such as historical development of the teaching improvement concept; models and results in the U.S.; getting to know the personality and characteristics of the participating faculty members in their own environment--laboratories, clinics, practices; creating a level of trust and ease by "just talking" with the participating faculty members about their concerns, likes, dislikes, etc., in general, rather than limiting discussion to their role as educators.

7.* The educational consultant, who would direct this effort, be a Panamanian national, with in-depth knowledge of the courses taught at the Schools of Medicine and Dentistry. This professional

might be educated in the process in the United States and, with the assistance of an outside consultant, develop the Clinic process at the University of Panama. This individual then would become an internal consultant to these schools, where the professors teaching medical or dental courses could be trained as educators.

8. The responsibility for the selection and location of this teaching improvement specialist and/or group of professionals not rest with the administration, since the faculty members had a deep mistrust of administrators' goals and motives. Alternates might include faculty members within each schools trained in the Clinic process serving on a one-year rotation basis, or a separate professional within each school who could become and school's in-house consultant, and would tailor the TABS questionnaire specifically to that particular school.

9.* The amount of time each faculty member teaches or spends in a laboratory situation be reduced. The resulting "free" time then could be spent in group discussions and/or interdepartmental faculty meetings discussing new discoveries, faculty/student concerns and other related educational

topics.

10. Specific attention be given to identifying those human relationship skills of the professors which are of practical value to a physician or dentist, and that they be taught as an integral part of a student professional's career.

11. During this project, a combination of faculty members/administrators participated. The extent of the possible pressure created by this combination of administrators and faculty members was not clear to the researcher, but comments made during the localization stage and later by responses to the faculty questionnaire indicated that there was tension between administrators and faculty members. It is recommended that in any future research, only peer faculty be utilized, so that an evaluation of a faculty development program and its acceptability to faculty members can be better evaluated.

12. In this study, two medical faculty members were assigned to particate, and three dental faculty members participated after their dean decided that he would be one of the subjects. It is recommended that only voluntary faculty members participate, since the data gathered in the localization

stage indicated that there was reservation about the effectiveness of any teaching improvement model.

13. During the various stages, it was evident from faculty members' comments that there existed a mistrust of administrators. This researcher had family ties with the upper administration of the University, which was known to these faculty members. It is recommended that this program be developed by an individual or group which has no political or family ties with such an administration, in order to alleviate fear of ulterior motives in the use of the data collected from such a teaching improvement instrument.

Related Observations on Teaching Improvement in Panama

In conducting this study, a number of issues and questions arose which had a bearing on teaching improvement in the Panamanian University, but which were not directly related to the central focus of this research. However, the researcher feels that they deserve mention for use in possible further research into the way the Panamanian professional schools of Medicine and Dentistry operate.

The first major issue concerns the use of time allocations. The physicians and dentists did all their own

teaching, from a freshman lecture course to the advanced seminars, as well as all the correcting and preparation of tests. The use of teaching assistants, either as teachers in the "elementary" subject matters, or as administrative assistants, preparing and correcting tests and serving as small group tutorial discussion leaders, is not known at this university. The use of such assistants would provide the graduating or senior students with some personal insights into the educational process, give them some income, and free the professors to spend their time in the pursuit of other matters, either as educators or researchers.

The second area of exploration is the use of hospitals for clinical training of the medical students. The dental students all spend part of their last year at the University in the clinic with actual patients, under the supervision of their professors, where they practice their technical skills, problem analyses and patient handling skills. The last year dental students also spend time in setting up and working in dental clinics in the country in a family care atmosphere, again under the supervision of their professors. Could the medical students benefit from such a practice? One of the expanding areas is the area of family practice in Panama, especially in the interior. It became increasingly clear during this study that the medical students, as opposed to the dental

tudents, had little or no exposure to such community settings. Might these medical students benefit from being placed under close supervision of their professors in such clinics and community health centers in the country's underdeveloped interior? Might such placements provide them with the ancillary skills of management, both financial and time, in setting up a practice and developing a clientele? Might such community-based physician training provide them with a familiarity and knowledge which might entice them at a later date to set up practice outside the big cities?

The third area of concern is the area of value system development. What is the role of the physician/dentist in regard to patient care, especially the human side of the patient? In listening to the discussions between students/faculty and faculty/administrators, it became clear that values were not being addressed in a systematic manner. The TABS questionnaire also pointed out that the area of value systems is one of diverse proficiency, but the majority of the professors did not perceive it to be an integral part of his/her teaching responsibilities, either as an educator or as a physician or dentist. Should the medical professors develop the human side of their students, in light of their role as future arbitrators of life and death, and make it an integral part of the educational process?

Future Research as it Relates to Faculty Development Programs at the University of Panama

If teaching improvement programs, especially the Clinic to Improve University Teaching model, are to have significant impact on the quality of teaching in the medical and dental schools of the University of Panama, the following questions will have to be addressed and future research conducted to answer them:

1. The TABS questionnaire, one of the data source instruments, was used utilizing an existing translation from English to Spanish, done at the University of Chiapas, Mexico. Since each country uses different idiomatic expressions, it is recommended that another translation be developed, using idioms and vocabulary pertinent to the Panamanian culture.
2. The responses to the student questionnaire indicated that the medical and dental students would like to see human behavior skills questions added to the TABS questionnaire. It is recommended that further research be conducted in regard to these additional questions, since this type of question might be pertinent to the educational formation of the future physician or dentist.
3. The objectives of this pilot study were to obtain

data in regard to the acceptability and potential adaptability of this particular teaching improvement instrument. No attempt was made to obtain information on actual improvement of teaching skills. It is recommended that this process be administered through all five stages, as outlined in Chapter II, in order to collect more detailed information on the actual teaching improvement taking place.

4. As evidenced by faculty members' responses to the faculty questionnaire, the participating faculty members felt that the initial stage of this teaching improvement instrument had to be expanded in order to develop a rapport and create a trust relationship with the researcher. It is recommended that future research be conducted to determine how this initial stage might be modified in order to meet the Panamanian medical and dental faculty members' needs.

Summary

The objectives of this study were to determine the acceptability and potential adaptability of the teaching improvement model called the Clinic to Improve University Teaching, at the Schools of Medicine and Dentistry at the

University of Panama. In order to accomplish this, the Clinic process was given a trial run through its localization stage. Additional data were collected from participating faculty members, students and administrators via interviews and questionnaires regarding their assessment of the usefulness of this process. It was found that this teaching improvement instrument was acceptable to them in their effort to improve their teaching skills and behaviors. Students also saw their participation as a part of this process which they perceived to be useful. Findings include suggestions for minor modifications, such as expanding the initial information gathering and rapport building stage of the Clinic process and possibly modifying the TABS questionnaire to be more sensitive to particular disciplines and human behavior skills.

In general, the results of this study were encouraging. Students and faculty members decided that this was a desirable process for the purpose of improving the quality of teaching. Administrators saw enough merit in the process to be willing to evaluate the cost of implementing such a process at their institution.

APPENDIX A

CLINIC TO IMPROVE UNIVERSITY TEACHING

Appendix A A TEACHING IMPROVEMENT PROCESS

The Clinic to Improve University Teaching at the University of Massachusetts has developed, tested and is continuously refining a systematic teaching improvement process. This process involves the identification of specific instructional strengths and problems through the collection, analysis and interpretation of data from a variety of sources; deciding with the instructor which teaching strengths to generalize or which problems to work on; the utilization of any of a variety of teaching improvement strategies developed by the Clinic and other instructional experts; and a careful assessment of the effectiveness of our teaching improvement process. The entire process is undertaken by faculty members with the ongoing assistance and support of teaching improvement specialists who have been carefully trained by the Clinic.

The initial data-collection stage of the process begins with a personal interview with the instructor. This affords the teaching improvement specialist an opportunity to respond to the instructor's questions about the process and to solicit information about the instructor's course and teaching. Subsequent data collection always includes: classroom observation by the teaching improvement specialist; a videotape of a class segment; a student questionnaire; the instructor's self-assessment and predictions of student responses on the questionnaire; and course descriptions, syllabi, objectives, assignments, and examinations. This data collection process will typically require 45-90 minutes of the faculty member's time, and about 20 minutes of class time.

Parenthetically, the student questionnaires developed by the Clinic may be of particular interest. The Teaching Analysis by Students (TABS) instrument includes statements describing a variety of teaching behaviors considered important across disciplines and instructional modes. These items were derived from the descriptions of teaching skills and behaviors extracted from the work of Hildebrand, Wilson, and Dienst (1971), the Stanford microteaching literature, and the teaching experience of the Clinic staff. For each item, students are asked to decide whether they think the instructor's performance is satisfactory or in need of improvement. TABS results, in conjunction with the faculty member's self-assessment on the questionnaire, often cue the teaching improvement specialist and the instructor to appropriate areas upon which to focus during the next stage of the instructional improvement process.

After the results of the student questionnaires and faculty predictions of student responses are processed by computer, the teaching improvement specialist summarizes and synthesizes all data for an independent review by the instructor. Then the teacher and the improvement specialist together evaluate the data and attempt to identify the instructor's specific strengths and relative weaknesses. They then decide which of these the instructor will work toward generalizing or improving. This data review/analysis and negotiation process (which we call localization) will usually involve 60–90 minutes of the instructor's time. The instructor then has available an assortment of teaching improvement

Appendix A (Continued)

options. Many have already been developed and tested, at the Clinic and elsewhere, but much of the Clinic's effort continues to be directed toward creating and testing additional improvement strategies. Thus, our teaching improvement specialists must frequently develop immediately needed strategies and materials as they work with instructors. These teaching improvement strategies may be categorized generally as either training or monitoring techniques. Training strategies are procedures for providing instructors with the expertise needed to change their teaching behavior. These range from simply asking an instructor to try out some of the rather mundane and easily undertaken teaching techniques which experienced teachers have found useful, to training through microteaching, to the repeated use of practice-observation-critique cycles within the classroom. Such training strategies are usually undertaken with the assistance of the teaching improvement specialist. These strategies may focus directly on teaching skills or behaviors which have been identified as problems, or on the development of compensatory skills. Training strategies are nearly always used in conjunction with monitoring procedures — ways of collecting information from significant others about the realities and the effects of what is happening in the classroom. Examples include various types of student questionnaires and tests of learning, collecting and reviewing classroom video or audio tapes, and classroom observation and feedback by a teaching improvement specialist. Not surprisingly, given man's facility for corrective adaptation, dramatic changes in teaching behavior often occur in response to the information collected and without the use of specific training strategies. Improvement strategies, whether training or monitoring, vary substantially in the amounts of time which they demand of faculty members. The time spent on improvement strategies is always negotiated, but usually will range from five to fifteen hours.

The implementation of teaching improvement strategies is followed by an evaluation of the efforts of the instructor and the teaching improvement specialist. This process will ordinarily take up another 20 minutes of class time, and 60-75 minutes of instructor time. Data regarding the instructor's teaching skills and behaviors is re-collected and examined for evidence of teaching improvement. During a wrap-up session the instructor is asked for a written and oral critique of the Clinic process, the improvement strategies, and the teaching improvement specialist. Arrangements may be made at this time for follow-up work on the client's teaching.

APPENDIX B

TEACHING ANALYSIS BY STUDENTS (TABS) QUESTIONNAIRE

In English and Spanish

Appendix B

Teaching Analysis By Students

[TABS]

The Clinic to Improve University Teaching is working with instructors to improve the quality of teaching which they offer to their students. The Clinic is designed to help instructors identify and effectively use their particular teaching strengths, to isolate their specific teaching problems, and to develop improvement strategies directed at these problems.

In order to identify these strengths and problems, we are collecting information about teaching in this course by discussing course objectives and teaching patterns with your instructor, by observing and video-taping some classes, and by asking for student opinions about performance on some specific teaching skills and behaviors. The information will be used to obtain a clearer understanding of specific teaching strengths and weaknesses so that your instructor can work toward improvement. Thus, your responses will be of most value to your instructor if they are thoughtful and honest. Your cooperation will be very much appreciated.

Clinic to Improve University Teaching
School of Education
University of Massachusetts at Amherst

Appendix B (Continued)

Section I—Teaching Skills and Behaviors

In this questionnaire there are some statements concerning a variety of specific teaching skills and behaviors. Please read each statement carefully and then indicate the extent to which you feel your instructor needs improvement. Respond to each statement by selecting one of the following:

1. No improvement is needed (very good or excellent performance)
2. Little improvement is needed (generally good performance)
3. Improvement is needed (generally mediocre performance)
4. Considerable improvement is needed (generally poor performance)
5. Not a necessary skill or behavior for this course

Please make your decisions about the degree of improvement needed on the basis of what you think would be best for this particular course and your learning style. Try to consider each statement separately, rather than let your overall feelings about the instructor determine all the responses.

1. The instructor's explanation of *course* objectives
2. The instructor's explanation of the objectives for each class session and learning activity
3. The instructor's ability to arouse my interest when introducing an instructional activity
4. The instructor's explanation of the work expected from each student
5. The instructor's ability to maintain a clear relationship between the course content and the course objectives
6. The instructor's skill in clarifying the relationships among the various topics treated in the course
7. The instructor's skill in making clear the distinction between major and minor topics
8. The instructor's skill in adjusting the rate at which new ideas are covered so that the material can be followed and understood
9. The instructor's ability to clarify material which needs elaboration
10. The instructor's speaking skills
11. The instructor's ability to ask easily understood questions
12. The instructor's ability to ask thought-provoking questions
13. The instructor's ability to answer questions clearly and concisely
14. The instructor's overall effectiveness as a discussion leader
15. The instructor's ability to get students to participate in class discussions
16. The instructor's skill in facilitating discussions *among students* as opposed to discussions only between the instructor and students
17. The instructor's ability to wrap things up before moving on to a new topic
18. The instructor's ability to tie things together at the end of a class
19. The instructor's explanation of precisely how my performance is to be evaluated
20. The instructor's ability to design evaluation procedures which are consistent with course objectives
21. The instructor's performance in periodically informing me of my progress

Appendix B (Continued)

22. The instructor's selection of materials and activities which are thought-provoking
23. The instructor's ability to select materials and activities which are not too difficult
24. The instructor's provision of *variety* in materials and activities
25. The instructor's ability to use a variety of teaching techniques
26. The instructor's demonstration of creativity in teaching methods
27. The instructor's management of day-to-day administrative details
28. The instructor's flexibility in offering options for individual students
29. The instructor's ability to take appropriate action when students appear to be bored
30. The instructor's availability for personal consultation
31. The instructor's ability to relate to people in ways which promote mutual respect
32. The instructor's maintenance of an atmosphere which actively encourages learning
33. The instructor's ability to inspire excitement or interest in the content of the course
34. The instructor's ability to relate the subject matter to other academic disciplines and real world situations
35. The instructor's willingness to explore a variety of points of view
36. The instructor's ability to get students to challenge points of view raised in the course
37. The instructor's performance in helping me to explore the relationship between my personal values and the course content
38. The instructor's performance in making me aware of value issues within the subject matter

Section II—Other Information

Please mark the appropriate response for each of the following items beside the correct statement number on the answer sheet.

39. Class:
    (1) freshman
    (2) sophomore
    (3) junior
    (4) senior
    (5) graduate student
40. Sex:
    (1) male
    (2) female
41. Grade point average:
    (1) less than 1.50 (lowest)
    (2) 1.50-2.49
    (3) 2.50-2.99
    (4) 3.00-3.49
    (5) 3.50-4.00 (highest)
42. In terms of the directions my life is taking, this course is:
    (1) relevant
    (2) somewhat relevant
    (3) irrelevant
    (4) I am unsure

Appendix B (Continued)

43. In this course I am learning:
    (1) a great deal
    (2) a fair amount
    (3) very little
    (4) I am unsure

44. As a result of this course, my attitude toward the instructor is:
    (1) becoming more positive
    (2) becoming more negative
    (3) unchanged

45. As a consequence of participating in this course, my attitude toward the subject matter is:
    (1) becoming more positive
    (2) becoming more negative
    (3) unchanged

46. I would prefer that this course:
    (1) become more structured or organized
    (2) become less structured or organized
    (3) maintain about the present level of structure

47. Which of the following descriptions of student learning styles most nearly approximates your own? (Choose only one.)
    (1) I like to think for myself, work alone, and focus on learning personally relevant content.
    (2) I prefer highly structured courses and will focus on learning what is required.
    (3) I try to get the "most out of classes," and like sharing my ideas with others and getting involved in class activities.
    (4) I am competitive, concerned about getting good grades, and try to learn material so that I can perform better than others.
    (5) I am generally turned off as a student, uninterested in class activities, and don't care to work with teachers or other students.

48. About how much time and effort have you put into this course compared to other courses of equal credit?
    (1) much more
    (2) somewhat more
    (3) about the same amount
    (4) somewhat less
    (5) much less

49. Generally, how valuable have you found the assigned readings in terms of their contribution to your learning in this course?
    (1) very valuable
    (2) fairly valuable
    (3) not very valuable
    (4) there have been no assigned readings

50. Overall, I would rate this course as:
    (1) excellent
    (2) good
    (3) mediocre
    (4) poor

Appendix B (Continued)

CUESTIONARIO SOBRE HABILIDADES Y ACTIVIDADES DE ENSEÑANZA

(C H A E)

Por medio del presente cuestionario queremos averiguar hasta qué punto, en opinión de sus estudiantes, el catedrático de esta materia necesita mejorarse en las áreas que se indicarán.

Le suplicamos a Ud. que lea cada afirmación con suma atención y la compare con la escala dada (Sección I) o con los números entre paréntesis (Sección II). Al llegar a una decisión, márquela con un círculo en la columna correspondiente de la hoja de respuestas.

Tome sus decisiones considerando cada afirmación por separado, sin permitir que su actitud general hacia el catedrático determine la orientación de sus respuestas.

Si ya ha llenado este cuestionario en otra ocasión, sea todavía más cuidadoso, para no caer en generalizaciones. La sinceridad de sus respuestas será de gran valor en el proceso de ayuda al mejoramiento de la enseñanza de su catedrático.

Clínica para el Mejoramiento de la Enseñanza
Centro de Desarrollo de Recursos Humanos
Universidad Autónoma de Chiapas

Appendix B (Continued)

SECCION I

Habilidades y actividades didácticas

E S C A L A

1.— No necesita mejoramiento (desempeño bueno o excelente)

2.— Necesita mejorarse un poco (desempeño bueno en general)

3.— Necesita mejorarse (desempeño mediocre)

4.— Necesita mejorarse notablemente (desempeño de calidad inferior)

5.— No es una habilidad o actividad necesaria para este curso

6.— No comprendo la afirmación.

1.— La explicación que el maestro da acerca de los objetivos de este curso

2.— La explicación que el maestro da acerca de los objetivos de cada clase y de cada actividad de aprendizaje

3.— La capacidad del maestro para despertar mi interés al presentar una actividad de aprendizaje

4.— La explicación del maestro acerca del trabajo que espera de cada estudiante

5.— La capacidad del maestro para mantener viva en mi mente una relación clara entre el contenido del curso y los objetivos del mismo

6.— La habilidad del maestro para aclarar las relaciones entre los diferentes temas tratados en el curso

7.— La habilidad del maestro para establecer la diferencia entre unidades y temas

8.— La habilidad del maestro para determinar oportunamente la presentación de temas nuevos, de manera que puedan ser entendidos

9.— La habilidad del maestro para aclarar temas que necesitan mayor explicación

10.— Las habilidades de exposición verbal del maestro

11.— La habilidad del maestro para hacer preguntas fáciles de entender

12.— La habilidad del maestro para hacer preguntas que me hagan pensar profundamente

13.— La habilidad del maestro para dar respuestas claras y concisas

14.— La eficacia del maestro como conductor de discusiones

15.— La habilidad del maestro para impulsar a los estudiantes a participar en discusiones

16.— La habilidad del maestro para promover discusiones entre nosotros, a diferencia de discusiones que se realizan exclusivamente entre el maestro y los estudiantes

17.— La habilidad del maestro para redondear un tema antes de pasar a otro nuevo

18.— La habilidad del maestro para presentar conclusiones al final de cada clase

19.— La explicación del maestro acerca de la forma exacta de evaluación que va a hacer de mi aprovechamiento

20.— La habilidad del maestro para elegir formas de evaluación y tareas relacionadas con los objetivos del curso

21.— La actitud del maestro al informarse periódicamente sobre mi progreso

Appendix B (Continued)

22.— La selección por parte del maestro ds materiales y actividades que me lleven a la reflexión

23.— La habilidad del maestro para escoger material y actividades no demasiado difíciles

24.— La variedad de materiales y actividades que el maestro utiliza

25.— La habilidad del maestro para usar diversas técnicas de enseñanza

26.— La demostración por parte del maestro de creatividad en los métodos de enseñanza

27.— La puntualidad del maestro y su asistencia a clases

28.— El conocimiento e interés que el catedrático demuestra para orientar a los estudiantes académicamente

29.— La habilidad del maestro para tomar medidas apropiadas cuando los estudiantes parecen estar aburridos

30.— La accesibilidad del maestro para consulta individual

31.— La habilidad del maestro para relacionarse con nosotros, de manera que exista respeto mutuo

32.— La capacidad del maestro para mantener un ambiente dinámico y apto para el aprendizaje

33.— La habilidad del maestro para promover interés con respecto al contenido del curso

34.— La habilidad del maestro para relacionar el contenido del curso con el de otros y con situaciones en el mundo real

35.— La buena voluntad del maestro para explorar diversos puntos de vista

36.— La habilidad del maestro para interesar a los estudiantes en la crítica constructiva de puntos de vista presentados en el curso

37.— La actitud del maestro para ayudarme a explorar las relaciones entre mis propios valores y el contenido del curso

38.— La habilidad del maestro para hacerme consciente de la posibilidad de señalar verdades relacionadas con el contenido del curso

SECCION II

Información Adicional

A partir de esta proposición, solicitamos información de sus actividades estudiantiles; para responder no necesita hacer uso de la escala ya que cada una de las proposiciones contiene sus propias alternativas

39.— Semestre que cursa actualmente:

(1) Primero o segundo

(2) Tercero o cuarto

(3) Quinto o sexto

(4) Séptimo u octavo

(5) Noveno o décimo

Appendix B (Continued)

40.— Sexo
(1) Masculino
(2) Femenino

41.— Promedio general (considere el que posee actualmente; si lo desconoce, anote el que haya obtenido en el semestre anterior)
(1) **A**
(2) **B**
(3) **C**
(4) **D**
(5) **F**

42.— Con relación a la orientación general de mi vida, este curso es:
(1) Importante
(2) Poco importante
(3) Irrelevante
(4) No estoy seguro

43.— En este curso estoy aprendiendo:
(1) Mucho
(2) Algo
(3) Muy poco
(4) No estoy seguro

44.— Como resultado de este curso, mi actitud hacia el maestro:
(1) Se ha vuelto más positiva
(2) Se ha vuelto más negativa
(3) No ha cambiado

45.— Como resultado de mi participación en este curso, mi actitud con respecto a esta materia:
(1) Se ha vuelto positiva
(2) Se ha vuelto negativa
(3) No ha cambiado

46.— Preferiría yo que este curso:
(1) Estuviera mejor organizado
(2) Estuviera menos organizado
(3) Mantuviera el mismo nivel de organización

47.— ¿Cuál de las siguientes descripciones se aproxima más a su propia forma de aprender? Escoja solamente una

(1) Me gusta pensar por mí mismo, trabajar solo, orientar mi aprendizaje hacia contenido de relevancia personal
(2) Prefiero cursos bien organizados y me interesa aprender lo que me exigen
(3) Trato de "sacarles jugo" a mis clases, me agrada compartir mis ideas con otros y participar en las actividades de clase
(4) Me atrae la competencia, me preocupa obtener buenas calificaciones, trato de aprender la materia de modo que pueda salir adelante mejor que los demás.
(5) Generalmente no me atraen los estudios, no me interesan las actividades de clase y no me ilusiono para trabajar con otros, ya sean maestros o compañeros

48.— ¿Cuánto tiempo y esfuerzo ha usted dedicado a este curso si lo compara con otros de igual dificultad?
(1) Mucho más
(2) Algo más
(3) Casi igual
(4) Algo menos
(5) Mucho menos

49.— ¿Hasta qué punto han sido provechosos para Ud. los textos que el maestro ha seleccionado para este curso?
(1) Muy provechosos
(2) Algo provechosos
(3) Poco provechosos
(4) No fueron señalados

50.— En general, designaría este curso como:
(1) Excelente
(2) Bueno
(3) Mediocre
(4) Deficiente

APPENDIX C

CLINIC TO IMPROVE UNIVERSITY TEACHING

COURSE INFORMATION FORM

Appendix C

CLINIC TO IMPROVE UNIVERSITY TEACHING

COURSE INFORMATION FORM

Faculty Member's Name _____ Date _____

Course Title _____

Course Number _____ Department in Which Course is Offered _____

Number of Students Enrolled ____ About how many of the students are: ____freshman;

____sophomores; ____juniors; ____seniors; ____graduate students?

When does your course meet? _____ Where does it meet? _____

Do you grade: _____A through F; ____satisfactory/unsatisfactory; ____pass/fail?

On what basis are grades assigned? _____

_____

_____

How is your course structured (i.e., one lecture and two labs a week, three discussion groups a week, one seminar group a week, etc.)? _____

_____

If you have copies, would you please attach: ____syllabus; ____reading list;

____copies of assignments; ____copies of quizzes or examinations.

Generally, what are the objectives of this course (please describe on the back of this sheet)?

APPENDIX D

TEACHING SKILLS AND BEHAVIORS: DEFINITIONS AND TABS ITEMS

In English and Spanish

Clinic to Improve University Teaching

Teaching Skills and Behaviors:

Definitions and TABS Items

I. ESTABLISHING A LEARNING SET: The instructor's ability to create in students a cognitive and affective predisposition to engage in a given learning activity (1-4).

II. LOGICAL ORGANIZATION: The instructor's skills in arranging and presenting course content and learning activities so that students understand the relationship among the various topics, ideas, issues, activities, etc., covered in the course (5-7)

III. PACING: The instructor's skills in introducing new topics or activities at an appropriate rate and in spending enough, but not too much, time developing those topics or activities (8).

IV. ELABORATION: The instructor's skill in clarifying or developing an idea or topic (9).

V. EXPRESSION: The instructor's skills in using verbal (voice tone, inflection, pitch, emphasis) and nonverbal (facial expressions, gestures, body movements) techniques to increase the power and meaning of his/her communication (10).

VI. ASKING QUESTIONS: The instructor's skill in using various questioning techniques at appropriate times and for a variety of instructional purposes (11, 12).

VII. RESPONDING TO QUESTIONS: The instructor's ability to answer questions clearly and concisely and with an appropriate emotional tone (13).

VIII. STUDENT PARTICIPATION: The instructor's skills in facilitating student participation in class discussions and in leading those discussions in fruitful directions (14-16).

IX. CLOSURE: The instructor's abilities to integrate the major points of a lesson or unit of instruction, to establish a cognitive link between the familiar

and the new, and to provide students with a feeling of accomplishment (17, 18).

X. EVALUATION: The instructor's skills in specifying the criteria for evaluation, in designing valid and reliable evaluation procedures, and in providing adequate feedback to students about their progress (19, 21).

XI. LEVEL OF CHALLENGE: The instructor's skills in selecting course objectives, content, and activities which challenge students' conceptual abilities but which are not too difficult for students to master.

XII. METHODS AND MATERIALS: The instructor's ability to use various teaching methods effectively and to provide variation in cognitive behaviors, classroom activities, and instructional materials (24, 25).

XIII. CREATIVITY: The instructor's ability to use creative and imaginative teaching strategies (26).

XIV. MANAGEMENT: The instructor's skills in performing the organizational and administrative tasks in providing learning experiences for students (27).

XV. FLEXIBILITY/INDIVIDUALIZATION: The instructor's ability to deal with differing interests and abilities among students in his/her class and to respond constructively to student suggestions, criticisms, comments about his/her teaching strategies (28-30).

XVI. INTERPERSONAL RELATIONS: The instructor's ability to relate to people in ways which promote mutual respect and rapport (31).

XVII. LEARNING ENVIRONMENT: The instructor's ability to create and maintain an atmosphere conducive to student involvement (overt and/or covert) and learning (32).

XVIII. ENTHUSIASM/INSPIRATION: The instructor's abilities to conduct and direct learning activities in a dynamic manner and to stimulate interest and excitement in course content and activities (33).

XIX. PERSPECTIVE: The instructor's ability to establish

a frame of reference for concepts, issues, ideas, etc., and to expand that frame of reference to include an increasingly wider variety of viewpoints, implications, and relationships (34-36).

XX. VALUE CONTEXT: The instructor's abilities to:
a) identify explicitly his/her own values and to clarify the implications of those values in the selection and interpretation of subject matter;
b) to explore other values and their implications as they relate to his/her subject matter; and
c) to help students clarify their values and recognize the implications of those values for their personal and professional conduct (37, 38).

Centro de Desarrollo de Recursos Humanos

Clínica de Mejoramiento de la Ensenanza

Tuxtla Gutz, Chiapas, Octubre de 1975

La habilidad y actitudes que la Clínica trata de considerar se encierran en 20 posibilidades. Las definiciones de ellas que presentamos a continuación servirán como una guía para el maestro, sin tratar de profundizar en la materia.

I. INDUCCION: Habilidad del maestro para crear una predisposición total tanto intelectual como emotiva para trabajar en una actividad de aprendizaje (1-4).

II. ORGANIZACION LOGICA: Habilidad del maestro para ordenar y presentar el contenido del curso y las actividades didácticas de tal manera que los estudiantes entiendan las relaciones entre los diversos tópicos, ideas, problemas, etc., del curso (5-7).

III. RITMO: Habilidad del maestro para presentar tópicos nuevos o nuevas actividades en orden apropiado, de modo que gaste suficiente pero no demasiado tiempo en el desarrollo de los mismos y se adapte a las diversas necesidades del estudiantado (8).

IV. EXPOSICION: Habilidad del maestro para clarificar o desarrollar una idea o un tópico (9).

V. EXPRESION: Habilidad del maestro en el uso de técnicas verbales (tono de voz, inflexión, timbre, acento) o no verbales (expresiones faciales, gestos, movimientos) que incrementen el impacto de su comunicación (10).

VI. TECNICA INTERROGATIVA: Habilidad del maestro en la formulación de preguntas apropriadas para una variedad de finalidades de carácter didáctico (11, 12).

VII. CALIDAD DE RESPUESTAS: Habilidad del maestro para contestar de forma clara, concisa y con la entonacion apropiada (13).

VIII. PARTICIPACION DEL ESTUDIANTADO: Habilidad del maestro

para propiciar la participación de cada estudiante en las discusiones de la clase y para orientar tales discusiones hacia direcciones fructíferas (14-16).

IX. INTEGRACION: Habilidad del maestro para resumir los puntos principales de una lección o unidad, para establecer conexiones intelectuales entre lo nuevo y lo conocido, y para dar al estudiante el sentimiento del aprovechamiento (17, 18).

X. EVALUACION: Habilidad del maestro para especificar criterios de evaluación, para desenar procedimientos de evaluación adecuados a los objetivos, y para informar al estudiante oportuna y apropiadamente acerca de su progreso (19-21).

XI. GRADUACION DE ESTIMULO: Habilidad del maestro para seleccionar los objetivos del curso, el contenido y las actividades de manera que sirvan como un desafío a la diversa capacidad intelectual de los estudiantes sin llegar a ser demasiado difíciles (22, 23).

XII. USO DE METODOS Y MATERIALES: Habilidad del maestro para utilizar eficazmente diversas técnicas didácticas, promover diversidad en actitudes cognoscitivas, organizar diferentes actividades en la clase y usar materiales de instrucción diversificados según los tópicos (24, 25).

XIII. CREATIVIDAD: Habilidad del maestro para utilizar estrategias de ensenanza creativas e imaginativas (26).

XIV. DIRECCION: Habilidad del maestro para ejercer las funciones organizativas y administrativas necesarias para proporcionar al estudiantado las experiencias educacionales apropiadas (27).

XV. FLEXIBILIDAD/PROBIDAD: Habilidad del maestro para ajustarse a los deferentes intereses y habilidades de los estudiantes en la clase y para responder en forma constuctiva a las sugerencias, comentarios y crítica del estudiantado con respecto a sus métodos de ensenanza (28-30).

XVI. RELACIONES INTERPERSONALES: Habilidad del maestro para relacionarse con otras personas de modo que

se promueva respeto mutuo (31).

XVII. AMBIENTE EDUCATIVO: Habilidad del maestro para originar y mantener una atmósfera propicia que anime al estudiante a involucrarse en actividades educacionales (32).

XVIII. ENTUSIASMO/INSPIRACION: Habilidad del maestro para conducir y dirigir las actividades didácticas de manera dinámica y para despertar interés y emoción con respecto al contenido y a las actividades del curso (33).

XIX. PERSPECTIVA: Habilidad del maestro para establecer un marco de referencia para los conceptos, asuntos, ideas, etc., y para ampliar dicho marco de referencia de modo que incluya una variedad cada vez mayor de puntos de vista, implicaciones y relaciones (34-36).

XX. CONTEXTO DE VALORES: Habilidad del maestro para: a) expresar claramente sus propios valores y su impacto en la selección e interpretación del contenido del curso; b) explorar otros valores y reconocer las implicaciones de los mismos; c) ayudar a los estudiantes a aclarar sus valores y reconocer las implicaciones de ellos que redundarán en su conducta personal y profesional (37-38).

NOTA: Los números entre paréntesis se refieren al orden del cuestionario dado a los estudiantes.

APPENDIX E

FREQUENCY OF SKILL UTILIZATION BY PROFESSORS

VIDEOTAPED STRENGTHS AND WEAKNESSES OF PROFESSORS

APPENDIX E

Frequency of Skill Utilization by Professors

Skills Observed*		Number of Professors Using Skill
Skill 1	Establishing a learning set	5
Skill 2	Logical organization	5
Skill 3	Pacing	5
Skill 4	Elaboration	4
Skill 5	Expression	5
Skill 6	Asking questions	3
Skill 7	Responding to questions	4
Skill 8	Student participation	3
Skill 9	Closure	3
Skill 10	Evaluation	1
Skill 11	Level of challenge	0
Skill 12	Variety	4
Skill 13	Creativity	4
Skill 14	Classroom management	0
Skill 15	Flexibility	3
Skill 16	Interpersonal relations	4
Skill 17	Learning environment	4
Skill 18	Enthusiasm	4

*See Appendix D for an elaborated definition of these skills.

(Continued)

Skill 19 Perspective	5
Skill 20 Value context	5

(continued)

Videotaped Strengths and Weaknesses of Professors

Professor	Strengths	Weaknesses
A	13, 14, 17, 18	11, 15, 16
B	6, 7, 8	14, 15, 16, 26
C	2, 6, 7, 10, 24, 25, 26	11
D	6, 7	3, 11, 12, 24, 25, 26
E	8, 12, 29, 34, 37	9, 11, 13
F	8, 34, 33	13, 14, 16, 24
G	2, 3, 4, 8, 31, 32	13, 14
H	17, 18, 22	2, 3, 16, 32

See TABS questionnaire (Appendix) for a description of items.

APPENDIX F

WEAKEST AND STRONGEST SKILLS BY PROFESSOR, ACCORDING TO TABS QUESTIONNAIRE

Professor A

(Total number of student responses: 69)

Strengths						Weaknesses					
Quest. No.	Prof. Self-Rating	Student Rating 1		2		Quest. No.	Prof. Self-Rating	Student Rating 3		4	
		%	N	%	N			%	N	%	N
6	1	73	41	23	13	*11	2	29	18	11	7
10	1	70	39	27	15	15	3	18	12	8	5
13	1	68	43	25	16	16	3	21	14	4	3
27	1	98	54	2	1	*21	2	17	7	17	7
32	2	66	38	29	17	23	2	28	13	13	6
33	1	51	31	46	28	*37	3	21	13	6	4

*Indicates discrepancy between teacher and student ratings

Comments on Professor A

Three questions, #11 (instructor's ability to ask easily understood questions), #21 (perofrmance in periodically informing students of their progress) and #37 (performance in helping students to explore the relationship between personal values and course content), where the professor did not perceive the need for improvement, but where the students' ratings indicated that they thought he needed improvement, were singled out for discussion during the localization stage.

Overall, there was no significant discrepancy between the professor's and the students' ratings, as well as the professor's prediction of the students' ratings.

Professor B

(Total number of student responses: 75)

Strengths						Weaknesses					
Quest. No.	Prof. Self-Rating	Student Rating 1		2		Quest. No.	Prof. Self-Rating	Student Rating 3		4	
		%	N	%	N			%	N	%	N
1	2	23	17	61	44	15	3	45	34	24	18
2	2	10	7	70	49	16	4	32	24	32	24
6	1	29	22	49	37	25	3	34	25	27	20
7	5	45	33	42	41	29	3	45	34	37	28
10	2	36	27	39	29	*32	2	38	29	22	17
27	1	97	70	1	1	*37	5	46	35	16	12

*Indicates discrepancy between teacher and student ratings.

Comments on Professor B

Questions #32 (instructor's maintenance of an atmosphere which actively encourages learning) and #37 (performance in helping students explore the relationship between personal values and course content) were of concern to the researcher because of the difference in student and professor ratings. They were selected for discussion during the localization stage.

Professor C

(Total number of student responses: 104)

Strengths						Weaknesses					
Quest. No.	Prof. Self-Rating	Student Rating 1		2		Quest. No.	Prof. Self-Rating	Student Rating 3		4	
		%	N	%	N			%	N	%	N
6	2	72	75	20	21	11	3	13	14	12	13
10	2	59	61	35	36	*19	1	14	15	10	10
27	1	79	79	15	15	*20	2	20	21	6	6
31	2	72	74	22	23	*21	1	16	14	7	6
33	2	61	63	33	34	23	3	15	14	9	9
34	2	73	77	23	24	30	2	11	11	9	9

*Indicates discrepancy between teacher and student ratings.

Comments on Professor C

Questions #19 (instructor's explanation of precisely how students' performance is to be evaluated), #20 (ability to design evaluation procedures which are consistent with course objectives) and #21 (performance in periodically informing students of their progress) were of concern to the researcher since the professor did not perceive them to be areas which needed improvement, whereas the students had ranked them in the weak category. This discrepancy was selected for discussion during the localization stage.

In addition, the professor seriously underestimated his strengths in comparison to students' assessments in questions #4 (instructor's explanation of work expected from each student), #5 (ability to maintain a clear relationship between the course content and the course objectives), #11 (ability to ask easily understood questions), #19 and #20.

Professor D

(Total number of student responses: 90)

Strengths						Weaknesses					
Quest. No.	Prof. Self-Rating	Student Rating 1		2		Quest. No.	Prof. Self-Rating	Student Rating 3		4	
		%	N	%	N			%	N	%	N
2	2	18	17	63	69	*3	2	26	23	11	10
10	2	38	35	46	43	*16	2	24	22	16	15
27	1	91	83	8	7	*21	5	16	14	21	18
30	1	71	66	13	12	*24	2	25	22	10	9
31	1	60	56	27	25	*25	2	28	25	12	11
35	2	44	41	32	30	*37	2	26	24	14	13

Comments on Professor D

The six questions to which the highest percentage of students had responded by rating this professor in need of improvement were not perceived to be areas of concern by the professor. This discrepancy was scheduled for discussion during the localization stage. In addition, the professor predicted that the students would rate him stronger than they did in questions #18 (instructor's ability to tie things together at the end of a class), #22 (instructor's selection of materials and activities which are thought-provoking) and #37 (performance in helping students explore the relationship between personal values and the course content), and he predicted a weaker rating than actually occured in #18 and #21 (performance in periodically informing students of their progress).

Question #21 emerged as a problem area, since one-third of the students felt it to need improvement, and the professor did not feel it applicable.

Professor E

(Total number of student responses: 34)

Strengths						Weaknesses					
Quest. No.	Prof. Self-Rating	Student Rating 1		2		Quest. No.	Prof. Self-Rating	Student Rating 3		4	
		%	N	%	N			%	N	%	N
12	1	65	22	26	9	2	3	53	17	9	3
14	2	38	13	44	15	*5	2	36	12	27	9
15	3	35	12	50	17	*9	2	35	12	26	9
27	1	94	31	6	2	*11	2	42	14	27	9
34	2	47	16	38	13	*13	2	32	11	38	13
36	5	33	11	52	17	*23	2	38	11	17	5

*Indicates discrepancy between teacher and student ratings.

Comments on Professor E

Questions #5 (instructor's ability to maintain a clear relationship between the course content and the course objectives), #9 (instructor's ability to clarify material which needs elaboration), #11 (ability to ask easily understood questions), #13 (ability to answer questions clearly and concisely) and #23 (ability to select materials and activities which are not too difficult), where the highest percentage of students felt that improvement was needed, were areas in which the professor did not perceive himself to need improvement. This was of concern to the researcher, and was scheduled as a topic for discussion during the localization stage.

In addition, this professor predicted that the students would rate him higher than they did in these five areas. This was also selected for discussion.

Professor F

(Total number of student responses: 25)

Strengths						Weaknesses					
Quest. No.	Prof. Self-Rating	Student Rating 1		2		Quest. No.	Prof. Self-Rating	Student Rating 3		4	
		%	N	%	N			%	N	%	N
8	1	56	14	40	10	4	3	35	8	0	0
11	2	65	17	31	8	*5	2	25	6	0	0
14	1	73	19	23	6	18	3	23	6	8	2
23	2	59	13	36	8	*19	1	27	7	12	3
28	2	57	13	39	9	21	3	28	5	17	3
35	3	46	12	50	13	*29	1	17	4	13	3

*Indicates discrepancy between teacher and student ratings.

Comments on Professor F

This professor's self-ratings in questions #5 (instructor's ability to maintain a clear relationship between the course content and the course objectives), #19 (instructor's explanation of precisely how students' performance is to be evaluated), and #29 (instructor's ability to take appropriate action when students appear to be bored) were of concern to the researcher since the professor and the students apparently did not agree.

Overall, there seemed to be problems in the areas of the professor's indications of his weak areas and the students' assessments. This was scheduled for discussion.

Professor G

(Total number of student responses: 37)

Strengths						Weaknesses					
Quest. No.	Prof. Self-Rating	Student Rating 1		2		Quest. No.	Prof. Self-Rating	Student Rating 3		4	
		%	N	%	N			%	N	%	N
10	2	86	32	14	5	19	3	21	8	18	7
13	2	57	21	32	12	20	3	24	9	16	6
27	1	83	30	14	5	21	3	43	16	16	6
28	2	65	24	30	11	22	3	22	8	11	4
31	2	84	31	16	6	23	2	22	8	11	4
32	2	38	14	57	21	37	3	23	8	26	9

Comments on Professor G

As far as teaching strength and weakness areas, both from the teacher's and the students' viewpoints, there was no concern as demonstrated by their agreement in these areas.

In general, the professor predicted that the students would rate him stronger than they did, while in the areas where he perceived himself to need improvement, more students agreed with him that his predictions indicated. However, overall there were no problems in this area.

Professor H

(Total number of student responses: 51)

Strengths						Weaknesses					
Quest. No.	Prof. Self-Rating	Student Rating 1		2		Quest. No.	Prof. Self-Rating	Student Rating 3		4	
		%	N	%	N			%	N	%	N
15	2	73	37	25	13	4	2	13	6	2	1
16	2	76	39	22	11	5	3	12	6	0	0
30	2	86	44	8	4	6	3	14	7	4	2
32	2	84	41	14	7	7	3	12	6	0	0
36	3	68	34	32	16	8	2	12	6	2	1
35	2	80	40	18	9	21	3	18	8	7	3

Comments on Professor H

Questions #4 (instructor's explanation of work expected from each student) and #8 (instructor's skills in adjusting the rate at which new ideas are covered so that the material can be followed and understood) were of moderate concern to the researcher since this professor did not perceive them to need improvement, whereas 13% and 12% respectively of the students felt otherwise. But due to the low percentages, this was not perceived by the researcher to be significant.

In questions #30 (instructor's availability for personal consultation), #36 (instructor's ability to get students to challenge points of view raised in the course) and #37 (instructor's performance in helping students explore the relationship between personal values and the course content), however, the majority of the students rated this professor as "no improvement needed," whereas he predicted that the majority would think that some improvement was needed. This was scheduled for discussion during the localization stage.

APPENDIX G

CHARACTERISTICS OF THE SCHOOLS OF MEDICINE AND DENTISTRY

Characteristics of the Schools of Medicine and Dentistry

I. School of Dentistry:

A. Characteristics of students:

1. average grade - C & D - 80%
2. feel they learn something - 60%
3. positive attitude toward professor - 43%
4. positive attitude toward material (subject matter) - 47%
5. like more structure - 70%
6. learning styles:
   a. learn what has to be learned - 29%
   b. share ideas, participate - 43%
   c. competitive, good grades - 11%

B. Characteristics of professors:

1. Strengths:
   a. interpersonal relations
   b. positive learning atmosphere (#32)
   c. perspective (#33, #34)
2. Weaknesses:
   a. establish a learning set (#2, #4, #5)
   b. evaluation (#19, #20, #21)

(continued)

3. Danger areas:

   a. team teaching integration

   b. curriculua assignment

C. Elements to be looked at for future reference (needs):

1. Assessment of teaching styles, so that team teaching can be effectively integrated and structured.

2. Controlled curriculua: establish courses in proper sequence.

3. Study the possibility of giving extrance examinations, so that there would be more uniform knowledge on the part of the students.

4. Overall evaluation of the exam system. At the time of the pilot project, it seemed quite subjective and not necessarily testing the stated objectives of the course.

II. School of Medicine:

A. Characteristics of students:

1. average grade - C & D - 75%

2. positive attitude toward professor - 53%

3. positive attitude toward subject matter - 45%

4. like more structure - 70%

5. learning style:
    a. learn what has to be learned - 28%
    b. participate, interact - 45%
    c. competitive, good grades - 10%

B. Characteristics of professors:
1. Strengths:
    a. logical organization (#6)
    b. expression (#10)
    c. management (#27)
2. Weaknesses:
    a. student participation (#15, #16)
    b. evaluation (#19, #20, #21)
3. Danger areas:
    a. lack of communication
    b. mistrust

C. Personal observations during the pilot project:
1. Great enthusiasm by the students that their professors were being evaluated.
2. The participating professors enthusiastic to find a model which not only determines their teaching weaknesses, but also their strengths, and helps them in overcoming the weaknessed by providing them with specific skills to practice.

3. Lack of communication among departments, colleagues, and administration. This resulted in not taking advantage of the existing technological resources or skills existent in specific departments, mistrust, and bitter faculty members who had become inactive in the pedagogical development of their departments.

E. Recommendations requested of the researcher by the Dean of Medicine:

1. Reduction of the teaching load (40 hours per week for a full-time faculty member, 20 hours per week for part-time faculty) and use of the created "free" time to develop a knowledge of what material is available, and who has specific pedagogical expertise and who is willing to share it with others.
2. Interdepartmental meetings with the department heads and the administration to discuss the mission of the University and its school's function in fulfilling that mission. Also, an evaluation of the resources, technical as well as human, available to these schools.
3. Interdepartmental analysis and evaluation of how the school's mission can be accomplished by utilizing the resources of that particular

department. This would result in a more effective and efficient communication system in which the professors would know the objectives and feel part of an overall effort to accomplish them.

APPENDIX H

CLINIC TO IMPROVE UNIVERSITY TEACHING

WORKING DEFINITIONS OF SOME TECHNICAL SKILLS OF TEACHING

SUMMER 1975

ANNUAL REPORT 1972-1973

TO THE

W. K. KELLOG FOUNDATION

Appendix H

Clinic to Improve University Teaching
Working Definitions of Some
Technical Skills of Teaching
Summer 1975

Paul Adams
June 5, 1975
Clinic to Improve
University Teaching

INTRODUCTION

The use of teaching skills to analyze teaching is not based upon a grand theory from which experimental items have been deduced for subsequent testing, weighting, and ranking. Rather, the approach is inductive; given a subjective realization that a group of teachers are excellent instructors what skills do they have in common? These skills are factor analyzed and grouped under somewhat arbitrary headings, being based for the most part on observable behaviors rooted in performance. Such an approach does not permit differential ranking or weighting of skills because it is the total package which is important rather that its component parts. Hence, the assumption behind the teaching skill umbrella is simply "it has worked for others, it is reasonable to assume that it will work for you."

This does not omit the possibility of taking one particular teaching skill and conducting an experiment to show how the trained utilization of the skill can improve teaching and affect learning outcomes. This has been done in a growing number of areas. No one pretends, however, that the combination of personality traits, subject demands, and institutional constraints, are not equally important variables which must go into the resultant mixture. The question is merely one of practical controls, manipulable variables, and pragmatic results which are generalizable. Rarely in educational research is it possible to take a given experiment and hypothesize that the positive results are scientifically generalizable across all possible populations. We cannot control for personality variables, and seldom do we have the opportunity to change institutions so radically that instruction takes on a whole new dimension. Teaching skills represent an approach to instruction which is capable of manipulation, training, control, experimentation, prediction, and self-assessment. Above all, disciplines, personalities and institutional settings may vary enormously and yet the skill approach is still workable and profitable.

The Clinic to Improve University Teaching regards these skills as take-off points which can be used to provide raw data, or taken as keys to discuss much broader issues such as teaching styles, learning variables, departmental curricula, and administrative constraints. Most important is the practice of grouping skills into item related programmed clusters, which are then assembled and utilized in procedural steps systematically, and then related to other sources of data such as class observations, instructional goals, videotaped performances, and self predictions. The evaluating population can be students, peers, experts, or the instructor in person. Additional data such as general course assessments, student outcomes, personal feelings, work loads, and recommendations for future planning, can all be added without endangering the systematic approach nor confusing the basic data, which enable strengths and weaknesses to be discussed. This is not the place to discuss in detail how the Clinic to Improve University Teaching conducts clients through the entire process aimed at instructional improvement. 1

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merely wish to illustrate some of the ways that teaching skills can be used as a basis for the investigation of instructional problems.

There remains the question of how the following teaching skill list was compiled, and why some skills have been included and others not. First and foremost, the teaching skills that follow have been selected according to the needs of the Clinic Program. There is no claim that the list is exhaustive, nor that most of the major skills are automatically included. We have extracted from the literature a number of skills which through experience have proven to be the most effective for our purposes. Each individual skill item is also fitted into our program for a variety of reasons which preclude inter-item comparability. For example, there is no attempt to weight the contribution of "creativity" or "value context," as compared with "pacing" or "logical organization." They are all oranges and apples both internally and externally. The result is a series of working documents, compiled by Clinic Staff, which taken together represent a congeries of building blocks which can be assembled and reassembled in different ways to accommodate the particular style of an individual instructor. The context, style, and personality of the teacher determines the importance of certain skills as much as their particular intrinsic worth. Ontological and validity problems inherent in such an approach are more than offset by the inductive helix of individual weighting applied to disjunctive skills. In the absence of objectively verified weighting systems which can produce taxonomies in descending order of importance, the individual teacher can profitably produce his or her own that can be applied to himself or herself alone.

To repeat, these teaching skills have all been extracted from (i) Published literature, (ii) inductive studies of excellent teachers, (iii) Research into Higher Education. The selection of skill items was determined by the systematic procedures of the Clinic process and Clinic experience in applying that process. The applicability and generalizability of the skills chosen have been tested in primary schools, high schools, and post-secondary institutions with equal success. The aim is one of personal selection for individual improvement against a background of inductively produced criteria.

Finally, the twenty skills discussed in this manual not only overlap as to content and applicability, but also some questionnaire items load on more than one skill when factor analysed. Since the basis of skill analysis is the examination of a process, time warped to enable that process to be examined at all, such overlapping is to be expected. Again, the bases for the grouping of skill items on the questionnaire, and for the varied number of items attributed to each skill, are the needs of the Clinic Program, and client centered concerns. For individual cases the skill items may well be discussed in a different order than that appearing on the computer print-out. Invariably all skills are functionally related in analysing a teacher's results, for the crux of such an analysis is to show how a particular strength or weakness has a halo effect across a whole series of items. The discharge of electricity

called lightening is usually measured at the point it hits the ground, but the process of the flash, if it could be halted in mid-air is far more revealing. The sole purpose of the teaching skill approach is to throw a little light into the black box of the teaching/learning continuum.

Insofar as these skills are teacher-centered most of them cover activities which occur mainly inside the classroom. There is also an assumption of teacher talk or teacher direction which will be more applicable in some situations rather than others. We do not mean that this is necessarily the format that the Clinic tries to encourage in all pedagogical situations. The fact that most teachers still conduct their classes in more or less traditional ways at university, requires the Clinic to concentrate most of its resources in that area. When a university exists which encourages almost total self-instruction with the aid of multifarious media and learning methods, with professors acting as problem solvers and human supporters rather than fact machines, then no doubt we should be concentrating on totally different skills of teaching.

Finally, a word about the definitions themselves. As they are not scholarly papers, there are no references necessarily included. The aim is to provide more information than that contained in the original short definitions produced for the TABS questionnaire. Further inquiries to the Clinic for bibliographies and/or more scholarly references for the Teaching Skills would certainly be welcome. Occasionally, improvement suggestions are built into the definitions, sometimes they are only outlined or implied. With the aid of a teaching improvement specialist further suggestions and change strategies can be added. We believe that by reading the relevant skill descriptions before consulting with a specialist, the interview should be more rewarding and helpful to both sides.

Clinic to Improve University Teaching

Teaching Skills and Behaviors: Definitions and TABS Items

I. ESTABLISHING A LEARNING SET: the instructor's ability to create in students a cognitive and affective predisposition to engage in a given learning activity (1-4).

II. LOGICAL ORGANIZATION: the instructor's skill in arranging and presenting course content and learning activities so that students understand the relationships among the various topics, ideas, issues, activities, etc., covered in the course (5-7).

III. PACING: the instructor's skill in introducing new topics or activities at an appropriate rate and in spending enough, but not too much, time developing those topics or activities (8).

IV. ELABORATION: the instructor's skill in clarifying or developing an idea or topic (9).

V. EXPRESSION: the instructor's skill in using verbal (voice tone, inflection, pitch, emphasis) and nonverbal (facial expressions, gestures, body movements) techniques to increase the power and meaning of his/her communication (10).

VI. ASKING QUESTIONS: the instructor's skill in using various questioning techniques at appropriate times and for a variety of instructional purposes (11, 12).

VII. RESPONDING TO QUESTIONS: the instructor's ability to answer questions clearly and concisely and with an appropriate emotional tone (13).

VIII. STUDENT PARTICIPATION: the instructor's skills in facilitating student participation in class discussions and in leading those discussions in fruitful directions (14-16).

IX. CLOSURE: the instructor's abilities to integrate the major points of a lesson or unit of instruction, to establish a cognitive link between the familiar and the new, and to provide students with a feeling of accomplishment (17, 18).

X. EVALUATION: the instructor's skills in specifying the criteria for evaluation, in designing valid and reliable evaluation procedures, and in providing adequate feedback to students about their progress (19-21).

XI. LEVEL OF CHALLENGE: the instructor's skills in selecting course objectives, content, and activities which challenge students' conceptual abilities but which are not too difficult for students to master (22, 23).

XII. METHODS AND MATERIALS: the instructor's ability to use various teaching methods effectively and to provide variation in cognitive behaviors, classroom activities, and instructional materials (24, 25).

XIII. CREATIVITY: the instructor's ability to use creative and imaginative teaching strategies (26).

XIV. MANAGEMENT: the instructor's skill in performing the organizational and administrative tasks in providing learning experiences for students (27).

XV. FLEXIBILITY/INDIVIDUALIZATION: the instructor's ability to deal with differing interests and abilities among students in his/her class and to respond constructively to student suggestions, criticisms, comments about his/her teaching strategies (28-30).

XVI. INTERPERSONAL RELATIONS: the instructor's ability to relate to people in ways which promote mutual respect and rapport (31).

XVII. LEARNING ENVIRONMENT: the instructor's abilities to create and maintain an atmosphere conducive to student involvement (overt and/or covert) and learning (32).

XVIII. ENTHUSIASM/INSPIRATION: the instructor's abilities to conduct and direct learning activities in a dynamic manner and to stimulate interest and excitement in course content and activities (33).

XIX. PERSPECTIVE: the instructor's ability to establish a frame of reference for concepts, issues, ideas, etc., and to expand that frame of reference to include an increasingly wider variety of viewpoints, implications, and relationships (34-36).

XX. VALUE CONTEXT: the instructor's abilities: a) to identify explicitly his/her own values and to clarify the implications of those values in the selection and interpretation of subject matter; b) to explore other values and their implications as they relate to his/her subject matter; and c) to help students clarify their values and recognize the implications of those values for their personal and professional conduct (37-38).

Appendix H (Continued)

Bette L. Erickson
Clinic to Improve University
Teaching
April 16, 1974

ESTABLISHING A LEARNING SET

ESTABLISHING A LEARNING SET refers to the instructor's ability to create in students a predisposition to engage in and to learn from instructional activities. Effective performance of this skill requires behaviors which arouse students' interest in learning activities and which help students direct their efforts toward desired learning goals.

Several psychological experiments have demonstrated that the "set," or predisposition to respond, with which students approach learning activities is a powerful element in determining the kinds of learning which will occur. Moreover, research indicates that the instructor is instrumental in inducing the set with which students approach learning, both in terms of affecting their desire to engage in learning activities and in terms of influencing the kinds of learning which occur (Aubertine, 1964; Fortuna, 1965). Yet, many instructors spend very little time preparing students for classroom activities or assignments. Often, this preparation consists of distributing a syllabus, telling students the topic of the upcoming class activity, or asking students to read the next chapter in their text. Rarely is attention given to arousing students' interests in any of these activities or to providing guidelines which help students direct their efforts appropriately.

In most cases, the initial teaching activity of the instructor should be to establish a learning set. Thus, performance of this skill is appropriate at the beginning of a course or unit, when the instructor may arouse students' interest in the general topics and activities to be included and may indicate the kinds of learning which are desired. ESTABLISHING A LEARNING SET is also appropriate when introducing a new topic or activity at the beginning of a class or during the class, when the instructor may stimulate interest in exploring a particular area and may provide guidelines which facilitate students' exploration. Finally, performance of this skill is especially important in introducing assignments where their successful completion may depend upon the instructor's ability to motivate students and to provide clear directions regarding what is to be accomplished.

Arousing Students' Interest:

If students are not particularly interested in an activity, or if they see little to be gained by engaging in it, their efforts are likely to be minimal and their learning superficial. Thus, educational literature is filled with pleas urging instructors to "motivate" their students. However, what motivates one student may be very different from what motivates another, making it impossible to suggest motivation strategies which are guaranteed to work. Nonetheless, there are a number of techniques which have been used successfully to arouse students' interest in pursuing desired goals.

1. Offering incentives:

   Frequently, instructors attempt to interest students in pursuing instructional goals by offering incentives -- words of praise, the promise of high marks, a degree, etc. But the effectiveness of this strategy, of course, depends upon the degree to which the incentives are desired by students.

2. Raising provocative questions:

   Sometimes students' attention may be captured and maintained by introducing material or activities with thought-provoking questions. If students perceive these questions as interesting, they may be stimulated to read the assignment, listen to the lecture, participate in the discussion, etc. — assuming that the activity promises to shed light upon the questions.

3. Arousing controversy:

   Instructors may stimulate students to investigate a topic by introducing it as a controversial issue. This may be accomplished by taking an extreme position on the issue, by presenting conflicting viewpoints, by asking students to share their positions regarding controversial topics, etc.

4. Using surprise tactics:

   Sometimes students' interest may be aroused if they discover that things they have taken for granted turn out to be less obvious or certain than they had thought, or if they discover that what initially appears to be true turns out to be false. For example, an instructor might present an incomplete report leading to an inaccurate interpretation of some event. Then, further information is presented which causes students to question their initial interpretation of the event. Thus, the need to gather more information is demonstrated and students may be stimulated to investigate the topic more thoroughly.

5. Using analogy:

Students are more likely to pursue instructional goals if they perceive those goals to be related to their current interests. The use of analogy is one way of establishing this relationship. The instructor begins by asking students to consider some object, person, event, or condition which is known and of interest to them. This initial subject then becomes a reference point to which the new material or activity is compared. If carefully chosen, the analogy created serves as a vehicle for transferring student interest to the new activity or material.

6. Using simulation:

When used creatively and appropriately, simulations are powerful strategies for arousing student interest and maintaining student involvement. The instructor attempts to create a context or environment in which students may directly experience conditions similar to those which are to be studied. The instructor might use any one of a number of simulation "games" which have been developed for various disciplines, or such simulations may be created by the instructor to fit a specific area of study.

These techniques may be used in a variety of situations and for a variety of purposes. They may be expanded so that they are effective ways to introduce an entire course, or they may be tailored to introduce a specific topic or activity. Some lend themselves to certain materials and purposes better than others, so instructors should select techniques which best suit specific situations. Trying to arouse controversy about a topic which is not controversial may turn students off rather than turn them on. While all of these techniques are potentially powerful motivators, any one of them may lose its power if overused. The instructor who uses surprise tactics each time a new topic is introduced soon ceases to surprise because the strategy becomes so predictable. Thus, not only must instructors be creative in applying these techniques, but they must also be able to use a variety of the techniques effectively.

Providing Learning Guidelines:

In addition to arousing interest in instructional activities, effective performance of ESTABLISHING A LEARNING SET requires that the instructor provide guidelines which help students direct their efforts toward desired learning goals.

Some motivating techniques imply the learning outcomes toward which instructional activities are directed and require a little clarification. For example, introducing a discussion or assignment by asking a provocative question may serve to focus students' attention and direct

their efforts if the instructor makes it clear that students should be able to answer the question after the discussion is over or the assignment is completed. At other times, the motivating techniques are less suggestive of the specific objectives toward which activity is directed. For instance, simulation activities are rich in possible learning outcomes and the instructor may need to provide explicit guidelines which indicate the kinds of things students should consider or practice as they participate in the activity.

There are a number of strategies which instructors might use in providing such guidelines:

1. Defining Learning Goals:

Defining learning goals involves identifying what is to be learned from instructional activities. Students have a better sense of how they should approach and participate in upcoming activities if the instructor informs them BEFOREHAND about the content to be learned, the skills to be mastered, the attitudes to be examined, etc.

For example, an instructor might give a lecture on the study of the Samoan culture. If students are to listen to the lecture in order to acquire knowledge about the culture, they will focus upon the characteristics and facts reported about the culture. On the other hand, if students are asked to learn how different cultures are studied, they will focus upon the procedures and methodologies of investigation rather than upon specific facts and findings. The instructor might help students direct their attention toward the desired learning by making a brief introductory statement:

> As we talk about this culture, think about how researchers have gone about studying the Samoans. While I think you'll find the Samoans an interesting people, I'm not so concerned that you remember the facts and characteristics of their culture. It's more important that you know <u>how</u> the culture was studied -- what methodology and procedures were used.

2. Specifying Evaluation Procedures:

The evaluation procedures which the instructor intends to use in determining whether or not students have learned the content, mastered the skills, etc., often imply different kinds of learning, and, therefore, require different kinds of preparation. Thus, specifying how students will be asked to demonstrate that learning has occurred may affect how they participate in learning activities.

For example, students might demonstrate their understanding of an experimental procedure by describing the steps in the procedure or by performing an experiment using the procedure. However, these two activities require different kinds of preparation, because, in fact, they involve different levels of learning. The first involves learning at the Knowledge and Comprehension levels, whereas the second involves learning at the Application level as well. (For a more complete discussion of different levels of learning, see Bloom's Taxonomy of Educational Objectives.) The instructor might provide useful guidelines by saying:

> Next time you should be prepared to perform an experiment using the procedures described in Chapter X.

3. Providing Advance Organizers

Defining learning goals and specifying evaluation procedures are effective strategies for providing guidelines because they help students clarify what they are expected to know and to do as a result of instruction. Sometimes, however, they seem inappropriate in introducing lectures or discussions or assignments and are more effectively used to summarize a lecture or review a discussion activity. (For a more detailed discussion of this, please see the skill CLOSURE.)

An alternative strategy for ESTABLISHING A LEARNING SET is to provide "advance organizers" -- guidelines which enable students to organize and integrate subsequent material and activities. Advance organizers may take the form of a preview of topics to be covered, an outline of the lecture, a list of procedural steps required to accomplish a task, worksheets which focus students' attention on important sections of assigned reading, questions which guide students' participation in discussions and help them synthesize information presented, etc.

As with the techniques for arousing interest, the strategies for providing learning guidelines may be used in a variety of situations and for a variety of purposes. ESTABLISHING A LEARNING SET for the course as a whole might involve a definition of broad learning goals, an explanation of exams, papers, projects or other evaluation procedures, and a preview of the topics to be considered in the course. A unit or topical area may be introduced by defining the goals relating to that unit, describing how students' achievement of those particular goals will be measured, and previewing the topics and activities to be included in that unit. ESTABLISHING A LEARNING SET for a particular class or assignment may involve listing the specific learning goals for that class activity or assignment, indicating how achievement of those specific goals will be evaluated, and providing a preview of topics, an outline, a study guide, etc.

Because the "set" with which students approach instructional activities largely determines the time and energies students will invest in these activities and the kinds of learning which will occur, the behaviors related to ESTABLISHING A LEARNING SET are among the most important teaching activities an instructor performs. Since students interests and abilities are so diverse, effective performance of this skill is a demanding task, requiring judgment in selecting appropriate strategies, flexibility in using a variety of techniques, and creativity in adapting and applying techniques to a variety of situations.

Betty L. Erickson
Clinic to Improve
University Teaching
November 7, 1973

LOGICAL ORGANIZATION

LOGICAL ORGANIZATION refers to the instructor's skills in arranging and presenting course material and learning activities so that the relationships among the various topics and activities are clear. Teaching which helps students find a framework within which to fit new phenomena is likely to be much more effective than teaching which simply communicates masses of material in which the student sees no organization. The research reviewed by Rosenshine (1970) presented a number of studies where the variable of teacher organization was found to be positively correlated with student achievement. Moreover, Hildebrand, Wilson and Dienst (1971) found that behavioral descriptions corresponding to organization discriminated between "best" and "worst" teachers when university students were asked to rate their instructors. If an instructor is skilled in integrating material and activities into an organizational framework and is able to help students perceive the logical organization of that framework, it is likely that there will be an increase in student achievement and that students will develop a more positive attitude about the class and the competency of the teacher.

DECIDING UPON AN ORGANIZATIONAL FRAMEWORK:

The first step in organizing a course is the working out of objectives and the selection of course materials and activities to accomplish those objectives. The determination of objectives and decisions about course content are often subjective, but should be guided by considerations of what people knowledgeable in the field regard as necessary or desirable.

Once objectives have been set and materials and activities have been selected, the instructor's task is to decide upon a framework within which various phenomena to be considered in the course may be organized. This not only requires decisions about which concepts, topics and activities are to be emphasized, but also decisions about how to sequence the materials to be covered and the activities in which students will engage. Such decisions are made partly on the basis of the organization which the instructor and others knowledgeable in the field have found useful for integrating and understanding the material, and partly on the basis of educational considerations.

HELPING STUDENTS UNDERSTAND THE ORGANIZATIONAL FRAMEWORK:

Effective LOGICAL ORGANIZATION not only requires that an instructor decide upon a structural framework within which materials and activities are interdependent and coordinated, but also that students perceive the organization and understand the relationships among the various materials and activities. In some cases, the organizing principles are self-evident. However, it's frequently the case that the organization is crystal clear to the instructor, who is an expert in his subject, but very opaque to students just beginning to explore the subject. In such cases, there are several teaching behaviors

that an instructor might perform which help students perceive the organizational structure of the curriculum and understand the relationships among the various topics, activities, and objectives.

Beginning a course or unit or lesson by establishing a learning set may facilitate student understanding of the LOGICAL ORGANIZATION of subject matter. Explicit statements of aims and objectives inform students of exactly what they are expected to take away from a lesson or series of lessons. As such, they serve as <u>advance organizers</u> around which students may integrate the subsequent material and activities. Moreover, providing a frame of reference in which previous materials and activities are reviewed and future directions are previewed allows students to place content and activities within a structural context. In this way, the structure of the curriculum and the relationships among specific objectives and activities and broader course objectives are made more clear to students.

Even when the instructor has provided advance organizers and has established a frame of reference at the beginning of a unit of instruction, students may still lose track of the organization of the subject matter. One reason for this may be that, while the distinctions between major and minor topics in a subject may be clear to an expert, the various levels of importance are not always so apparent to a learner just beginning to explore the subject. Often the time spent on a particular topic or activity is disproportionate to its importance in the overall scheme of things -- sometimes because students have trouble understanding a concept, solving a problem, etc.; at other times, it's because they get caught up in interesting digressions. In contrast, some important concepts or skills are so well integrated into the instructor's organizational framework that they appear to be self-evident and are often given little time or emphasis. Unfortunately, students often interpret these as relatively minor points and fail to consider their implications or to integrate them thoroughly.

By emphasizing important aspects of the subject matter and activities, the instructor helps students to identify the more important topics and concepts and understand their relationships to material which is important only in that it supports, illustrates or clarifies these central ideas. The instructor may provide emphasis incidentally by raising his/her voice, gesturing, pausing to let important ideas "sink in," etc. Or he/she may use <u>verbal markers of importance</u> -- explicit statements which identify important topics or ideas. These might include listing key ideas on the board, making statements such as "now, this is really important," or "this is an example of ...," or "this is an interesting digression." Or he/she may ask students to make decisions about the importance of particular materials, ideas, or activities. Whatever techniques the instructor chooses, providing emphasis helps students identify important topics and organize less important information around them.

Another reason that students sometimes lose track of the LOGICAL ORGANIZATION of the subject is that they lose sight of the connections between learning activities and materials and course or class objectives. Not keeping these relationships clearly in mind, their attention and activities are not always

goal-directed, or may not be perceived as being goal directed even when they are. The instructor may help students see the relationships between activities in which they are engaged and the objectives by performing various task orientation behaviors — reminding students of the objectives, pointing out times when discussions or activities seem to be "off the subject," and redirecting students toward meeting defined goals. The instructor also helps students remain aware of LOGICAL ORGANIZATION by reinforcing goal-directed behavior when it occurs — commenting when students are "on the right track," when they've raised important issues, when they've accomplished the objectives efficiently and thoroughly, etc. Task-oriented behavior need not be rigid adherence to a lesson plan or curriculum, nor should it prevent "spur of the moment" changes in directions or plans. Moreover, effective LOGICAL ORGANIZATION does not require that an instructor always be task oriented. But well-timed task orientation behaviors insure that, over the long haul, classroom activities are aimed at clearly defined objectives and that students see the relationships between the two.

In a broader sense, the instructor may help students understand the LOGICAL ORGANIZATION of the course by expanding their perspective. Relating specific materials and activities to their implications, to other aspects of the curricula, to other viewpoints, and to outside-of-class experiences provides for students the widest possible associative net within which a variety of life experiences can be organized.

Finally, an instructor may facilitate students' understanding of LOGICAL ORGANIZATION by providing signals of transition during a lesson and by tying things together at the end of an instructional unit. Transitions which signal the end of one segment and the beginning of another provide students with reference points so that they know where the lesson or unit is, in light of where it's going. Closure at the end of a lesson or a unit or a course enables students to perceive and integrate the major concepts and relationships.

CONCLUSION:

The Clinic to Improve University Teaching does not advocate that instructors develop rigid organizational systems or tightly organized lesson plans. Often a particular structural framework helps one person understand various phenomena, but does not facilitate integration and coordination of that phenomena for others. Moreover, a worthwhile educational goal may be to help students acquire the skills of LOGICAL ORGANIZATION. It is the intention of the Clinic to identify teaching behaviors which help students find a framework within which to fit a variety of materials and experiences.

TEACHING SKILL: LOGICAL ORGANIZATION

Description of Problem:

After reviewing students' responses to the TAIS, the instructor had identified Logical Organization as a skill he wished to improve. He was especially concerned about his performance in this area, because concepts and issues covered during class meetings did not seem to be reflected in the written assignments which students submitted. However, we were not sure whether the problem was that students were unable to identify and understand the important concepts being discussed, or whether students were having difficulty in application of these concepts. Therefore, we decided to find out what students were "taking away" from class meetings.

Improvement Strategy: Questionnaire to Monitor Students' Perceptions of Logical Organization

Before class I asked the instructor to define his objectives for that class meeting and to identify the main concepts he intended to cover. I then videotaped the major portion of the class session for later review. At the end of the class period, I asked students and the instructor to complete the "Student Reaction Questionnaire" (attached), which the instructor and I had prepared earlier.

Before presenting the results of the questionnaire to the instructor, I typed all of the responses on one sheet of paper. While the instructor's "pre-class" definition of objectives and identification of main concepts closely corresponded to the comments he wrote on the "post-class" questionnaire, this list did not even slightly resemble the list of comments made by students.

In reviewing this information with the instructor, I first asked him to read through the list of student responses and to note those which he felt adequately summarized the main concepts in the lesson. He was astonished to discover that he was not completely satisfied with any of the students' responses. In some cases, students had identified the examples or illustrations that had been discussed that day, but no one had written down the concepts the instructor had hoped students would "take away" from the class. Not only was it clear that students were unable to identify the main concepts in his presentation, but it also was clear that students were having difficulties distinguishing examples from generalizations and seeing the relationships between the two.

As we reviewed the videotape, we looked for possible reasons for the difficulties that students seemed to be having. We identified three areas for further improvement efforts: (1) clarifying the learning objectives; (2) distinguishing between major and minor topics; and (3) clarifying how material covered in class related

to outside-of-class assignments.

Follow-up Strategies:

Although the instructor found the initial results of this monitoring strategy terribly frustrating, it was the first time he'd received any feedback about what students were "taking away" from specific classroom meetings. It was the impact of this information more than anything else which motivated him to experiment with the variety of improvement strategies that we read thereafter. (These are described elsewhere.)

Meanwhile, the instructor continued to use the "Student Reaction Questionnaire" at the end of several class meetings as a means of monitoring his progress in dealing with this problem.

Date:_____

STUDENT REACTION QUESTIONNAIRE

Directions:

Your instructor would like to help students learn more during class meetings. In order to provide him with information which will help him improve his lessons, would you please answer the following questions:

1. What seemed to be the most important concepts, issues, or generalizations covered during today's lesson? (Please write one or two lines summarizing each concept, issue, or generalization which you mention.)

2. In this class meeting, I felt I could identify the important ideas (check one of the following)

   ____more easily than before

   ____with the same ease as before

   ____less easily than before

Appendix H (Continued)

Betty Erickson
Clinic To Improve
University Teaching
January 23, 1974

PACING

PACING is the rate at which new ideas and activities are introduced and the time allotted to each of these ideas and activities. Decisions about PACING must be made while planning and while teaching a course.

Decisions about PACING during the planning stages are based partly on the instructor's judgments about the timing and weighting of various topics and activities. The instructor's decisions about when topics or activities are to be introduced should be consistent with the logical organization of the subject matter. It does not make sense to introduce content or activities which require knowledge or skills that are to be developed later in the course. Decisions about the amount of time spent on particular topics or activities should reflect the instructor's judgments about the relative importance of the objectives toward which those topics or activities are directed. It is unreasonable to allot two weeks to developing a relatively minor point or to plan lengthy assignments or activities around less important objectives.

The instructor's "best guess" about how much students will be able to understand and accomplish within a given amount of time should also influence decisions about PACING during the planning stages. The more information available about students' backgrounds, abilities, and interests, the better the instructor's guesses about PACING will be.

Unfortunately, decisions about PACING made during planning sometimes turn out to be inappropriate as instruction proceeds. One of the most frustrating experiences for teachers is the discovery that carefully planned schedules must be discarded because the students who enrolled turn out to be different from the students which the instructor had in mind while planning the schedule. It may turn out that students are able to understand difficult information or accomplish complex tasks more quickly than anticipated. By speeding up the pacing of instruction, the instructor can avoid "losing" students who will become bored if too much time is spent on such information or activities. On the other hand, the instructor may discover that students are having difficulty with concepts or tasks which they were expected to master easily and quickly. As it is not a good idea to introduce new information or activities before students have mastered previous subject matter, additional elaboration and practice may be required before students are able to integrate the material, complete the activities, and move on to new things.

If the instructor sticks to a schedule which is clearly inappropriate for students, the consequences for student learning may be unfortunate. Even more disastrous is commitment to a schedule which the teacher does <u>not know</u> is inappropriate for students in the class. Students are likely to become confused, bored, or frustrated.

Effective teaching requires that the instructor be able to assess student responses to instructional pacing. Although the instructor must be careful about interpreting nonverbal behaviors, such cues as poor student attention, signs of boredom, or expressions of frustration or confusion may suggest that the pacing is inappropriate. Generally poor marks on homework assignments, quizzes, and examinations may indicate that pacing is too fast. Unfortunately, the time lag between instruction on particular subject matter and evaluation of student learning may not enable the instructor to adjust the pacing when that adjustment would be most beneficial. An instructor may obtain more immediate feedback about pacing by frequently and systematically asking questions to check for student comprehension. Imprecise answers to such questions may suggest the need for more elaboration; uninspired responses may indicate the need for a change in topic or activity. An often informative and useful strategy is to ask students directly about PACING: "Am I moving too fast?"; "Are you with me so far?"; "Shall I give another example?"; "Should we work another problem?"

Effective performance of this skill also requires that an instructor be able to change the PACING of instruction if and when it is inappropriate. Flexibility in a teacher's attitude and approach to teaching is extremely crucial. It's often painful to "throw out" material or activities in which much planning time and energy have been invested, even when student responses clearly suggest such abandonment. And it's difficult to allot additional time for instruction on particular subject matter or to sacrifice some objectives when there is pressure "to cover a certain amount of ground."

Moreover, adjusting the PACING of instruction to suit learners requires the ability to "think on one's feet." The instructor must be able to provide additional examples or problems on the spot. The instructor must be able to make immediate decisions about changes in assignments or activities or schedules, and be able to come up with alternatives. Such demands require creativity as well as flexibility.

PACING, then, is something which ought to be planned for as a teacher thinks about the content and objectives of a course and considers the probable characteristics of the students who will enroll. Even with such planning, however, variations and adjustments are likely to be necessary as courses and classes proceed. These adaptations will be facilitated where active attempts are made to solicit and interpret student reactions.

Appendix H (Continued)

Paul Adams
Clinic to Improve University
Teaching
January 6, 1974

ELABORATION

This skill refers to the ability of the teacher to clarify new topics, concepts, or ideas. Elaboration places a premium upon the efficient use of examples, metaphors, or analogies to enable a student to move from the known or familiar to the unknown or unfamiliar. The skill probes the difficult task of raising student levels of understanding without causing anxiety, confusion, or misunderstanding.

Most people are fully aware of the usefulness of figures of speech in elaborating a given point. The fact that verbal analogies or metaphors are universal should indicate the importance of elaboration for the transference of meaning. As a teaching method we can systematically substitute, say an analogy, for a series of equally useful concepts. An analogy bridges the gap between the known and the unknown by emphasizing similarities, therefore anything else which accomplishes the same effect in the same situational context reinforces explanation. For example, we could say,

"Getting teachers to use a variety of teaching methods is like pulling teeth."

The unknown in this case is a vague open ended flexibility in teaching, the known is precise, dramatic and painful. However, if the goal is flexibility in teaching, then we could probably achieve better results by substituting a variety of elaborations after the word "is", viz: -

(a)...is easy once the following educational research findings are understood.

(b)...is dependent upon the following teaching/learning theories.

(c)...is illustrated by a film, slide show, video tape, etc.

(d)...is appreciated once we have finished the following experiment, project, exercise, etc.

(e)...is clear only when these problems/facts have been posed and solutions sought.

(f)...is understood well by experiencing the reverse; a monotonous, boring, unimaginative, philistine.

From these examples we know that elaboration entails the addition of more knowledge, the provision of illustrations, the management of learning experiences, the solution of relevant problems, and the perception of negative effects. So long as all these methods are related back to the main idea or theme they should help to explain that theme.

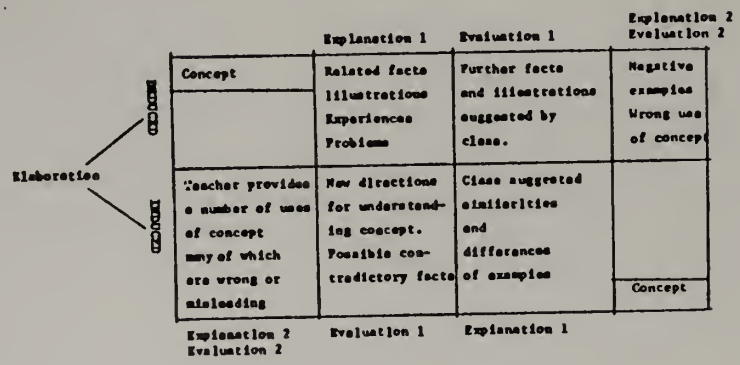
Classroom techniques and elaboration.

Once a topic has been elaborated by the teacher s-he should evaluate the new understanding of the students by asking them to illustrate the concept. If the instructor has begun with simple examples which are fully known (such as 'we use red for danger in traffic lights') and moved to more complex ones ('bulls will attack red capes rather than the persons holding them'), then students can be asked to do the same.

As soon as the teacher moves away from the common place (traffic lights) to the less common (bull fights), then care must be taken to insure that the familiar aspects are emphasized when returning to the main idea of use for the color red. Otherwise the example becomes less and less useful. (The use of red henna to color the hair of certain African and middle eastern peoples may be exotic but if nothing else is known about them it is only that as an illustration.)

Taxonomies of positive examples can often be augmented by listing negative examples suggested by the class. In this case there would be many neutral suggestions such as further examples of the use of red for danger. However, negative examples could be, the use of a skull and crossbones instead of red, the fact that red does not only mean danger (the Soviet flag), the use of red to make things visible, etc., etc.

By evaluating the grasp of a new concept through the invitation to students to provide further examples or non-examples, the teacher can pick out and repeat the main idea for every example. This not only allows connections to be made which are quite spontaneous, it also illustrates inductively what the teacher began by stating deductively. The above information is summarized in the following chart.



It is very important that negative examples are not used too early in the discourse or greater confusion will result. Whenever the the main idea is highly abstract elaboration is probably best achieved through deliberate stages from simple concrete analogies to advanced similar or antithetical abstractions. But lower level ideas should be explained at different levels simultaneously in order to allow a flexible level of challenge to the class.

An example of the first might be the diatonic musical scale or rules for the fugue, which start with historical descriptions of musical forms before the newer forms were perfected, illustrated of course in sound. The second might be the distinctive shape and probable function of leukemia cells, illustrated leukocytically, organically, pictorially or geometrically.

The aim is to stimulate without ever burdening or confusing the fragile concept, which once planted may soon be as certain as "man bites dog," though perhaps less inviting to newspapers. Nothing can be lost by attacking the problem systematically, if necessary by practicing in the micro-teaching laboratory, but much will be gained when elaboration has become as illuminating as second nature.

Paul Adams
May 1, 1975
Clinic to Improve
University Teaching

EXPRESSION

Expression here refers to the complex whole which includes verbal and non-verbal communication skills, attending behaviors, and classroom atmosphere. It is akin to the expertise whereby an actor may hold an audience in the palm of his hand, except that the teacher has no stage, few props, no lighting, and no make-up. Done well, the skill contains the essence of effective teaching; done badly, the most erudite truths will fall on deaf ears.

Verbal Behavior

The most characteristic expressive communication skill concerns the human voice. Vocal characteristics are trainable but are rarely given much attention by professors enamoured by the intrinsic grandeur of their subject matter. However, pitch, projection, articulation, pronunciation, tone, emphasis, pausing, and vocabulary are all communicated via the vocal chords to the students. The degree to which an instructor manipulates these skills determines to a great extent the amount of attention displayed by the audience. Since the experiments known as the Dr. Fox studies have shown that garbage can be communicated and accepted by an intelligent audience, there should be no doubt about the importance of verbal skills. The phrase, "I think you're intelligent" will produce a positive or negative effect on the learner entirely according to the way it is spoken. It could be a compliment, or it could convey envy, haughtiness, sarcasm, exasperation, or even resignation.

Choosing the right vocabulary is also very important. The amount of jargon allowed, using different words and phrases to explain the same concept, and even the adroit use of slang or everyday speech will enable a mixed audience to interpret the course content meaningfully. It is rarely that such a mastery of vocabulary is entirely natural, while often experts can improve their performance by undertaking practice sessions in specially convened workshops.

Thus, a student's understanding of a teaching-learning transaction is conditioned by the student's perception of various verbal behaviors. With an awareness of the quality of his/her verbal skills, an instructor can optimize learning through improved communication. "Every teacher must become aware of the importance of voice and speech in awakening interests and in inspiring a love of learning." (Mulgrave 1955: 1). Once an instructor decides to focus on improving a specific verbal behavior, changes can be made to occur, student understanding increased, and the learning environment enhanced.

Non-verbal Behavior

Non-verbal behavior relies on the visual perception of an audience.

It is unusual to find a person speaking without some use of his/her arms, hands, head and face movements, or body language. However, all of these expressive movements can stand alone; "it is possible to get along without words and still be engaged in emotional expression." (Eisenson and Bosco 1964: 2). Silence (pausing) hangs a space between cascading words, eye contact bridges distances, and smiles may make dreary statistics almost human. But also facial expressions may clarify ambiguous verbal statements, hands banged on the desk add emphasis, or walking about retain attention. A verbal compliment accompanied by a smile, a nod, or a gesture of acceptance, helps to create that vital sense of belonging. Passive classroom atmospheres are often the result of poor or conflicting non-verbal messages conveyed by the instructor. Therefore, non-verbal expression is not merely a matter of "play-acting" to the audience, it is more a question of reinforcement and mutual acceptance. Positive learning environments to some extent depend upon an awareness of the importance of non-verbal skills and their continued usage.

Attending Behavior

The test of a good acting performance is the degree of involvement of the audience. Similarly, the behavior of the students in class often leaves no doubt as to the effectiveness of a teaching performance.

This is not just a matter of occasional glances at the students to see who, or what percentage of them are paying attention. Positive classroom environments encourage students to participate in the teaching/learning process. This can be passive or active according to the teaching style, but usually it takes no special training to perceive student interest or otherwise. As Bolton points out "Students will feel more free and open to discuss fears or concerns they have about their competence in the subject," if they understand that such an input is acceptable and worthwhile. (Bolton 1971: 3) The skill of expression necessitates a finger on the pulse of the audience as much as the ability to bounce words off the back wall of the room. The feedback provided by the audience is essential for the maintenance of a healthy learning environment. This is one reason why close videotape sessions scan the audience regularly to record its reaction to a particular period of instruction. Instructors are often surprised to find that the gems of knowledge eagerly proferred from their notes appear to be nothing more than paste to their students. An understanding of meaningful student responses helps to polish the stones so that everybody may appreciate their luster. In turn, the atmosphere of trust created, that is a certainty that most participants are understanding the same truths, will encourage participation and mutual acceptance.

Some Improvement Strategies

Improving communication skills requires firstly an awareness of

Appendix H (Continued)

their importance, and secondly a means whereby they may be rehearsed in non-threatening situations. Awareness can be achieved simply by monitoring actual class sessions. Audio or videotape are both effective in tracing voice tone, articulation, and pitch, etc., but videotape is needed to record non-verbal behaviors. Self-improvement often requires nothing more than the shock of seeing oneself in action, or seeing ourselves as others see us. Teaching improvement specialists are useful in suggesting ways of avoiding unwelcome behaviors or irritating personal habits. But training sessions are best conducted in the microteaching laboratory. Here, any number of verbal or non-verbal skills can be rehearsed, with the possible aid of a speech specialist, before a "live" audience. Playing back each performance provides instant reinforcement and further evidence of possible changes to be tried. Even accomplished actors spend hours rehearsing the performance of certain passages before they are satisfied. University teachers should be no less professional in their attitude towards the art of professing. Microteaching is the ideal vehicle for such training.

In the absence of microteaching facilities the use of Flanders Classroom Observation techniques, or the help of a teaching peer invited to observe the class, can be valuable. Class observers can be asked to look for particular skills in the teacher, or particular attending behaviors of the students. Even some of the students might be asked on occasion, to take notes of the way they perceive the teacher's performance in certain well-defined areas. This will also have the effect of creating a more open classroom environment.

The Relation of Expression to Other Teaching Skills

The skill of expression is related to many other teaching skills such as (1) Asking questions, (2) Responding to Questions, (3) Student participation, (4) Creativity, (5) Interpersonal relations, (6) Learning environment, (7) Enthusiasm/Inspiration. By placing emphasis on the skill of expression, it is possible, through constant improvement, that beneficial results will occur elsewhere in these other skill areas.

Summary

The skill of expression enables the teacher to further two-way communication. The use of verbal and non-verbal skills is crucial to the interpretation or communication of meaning for the benefit of an audience. Likewise, the response of the audience is the best way of measuring the degree of competence displayed. Robinson and Becker (1968: 14) maintain that expression is the proper vehicle to convey perceptions of the world, emotions, desires, interests, and beliefs, but perhaps it is sufficient that the audience understands what the teacher is saying, and furthermore both teacher and audience know this to be true.

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Bette L. Erickson
Clinic to Improve University
Teaching
October 1, 1973

ASKING QUESTIONS

The skill area of ASKING QUESTIONS refers to the instructor's ability to use different types of questions for a variety of instructional purposes. Many instructors use questions as part of their teaching methods; some even vary the types and functions of their questions to suit their instructional purposes. However, more often it's the case that instructors consistently ask one or a few types of questions and frequently without any clear sense of purpose or direction. The result is that questions are not typically the powerful aid to learning that they might be. In contrast, instructors who are aware of their objectives, of the types of questions they might ask, and of the functions which questions may serve, are likely to make better decisions about how to conduct a lesson and use questioning strategies more effectively.

An instructor may use questions for any number of instructional purposes: to motivate students, to establish focus, to check on comprehension, to increase student participation, to vary the cognitive level at which subject matter is considered, etc. Obviously, the clarity of the questions and the emotional tone used by the instructor when he/she asks them contribute to their effectiveness as a learning aid for students. In addition, an instructor skilled in ASKING QUESTIONS is able to use various types of questions and to make them serve different functions.

TYPES OF QUESTIONS:

Recently, considerable attention has been given to the classification of the types of questions used in classrooms. These efforts have resulted in several classification schemes: convergent/divergent questions; higher order/lower order questions; open/closed questions; taxonomies of questions suggested by Bloom's Taxonomy of Educational Objectives, etc. These classifications are based largely on the cognitive functions of questions. That is, different types of questions "lead" students to process information at increasingly complex intellectual levels.

Since the classification system based upon Bloom's taxonomy of objectives allows the most discrimination in looking at the types of questions, a brief description of such a system may suggest strategies for constructing and using questions directed at achieving various cognitive objectives. The classification outlined below is described in greater detail in Classroom Questions (Sanders, 1966). Briefly, however, Sanders classifies questions into the following categories:

1. MEMORY: Memory questions require the student to recognize or recall information. The greatest problem in this category is not how to construct good memory questions, but rather how to determine the knowledge that is to be remembered. The proper boundaries of this knowledge are subject to disagreement, but generally, memory questions should be used to help students focus on that knowledge which will provide a foundation for the higher cognitive levels.

   Examples:

   The taxonomy of questions deals mainly with which of the following:
   a) cognitive learning
   b) affective learning
   c) physical learning
   d) none of the above

   Name the category of questions which requires the least complex intellectual operations.

2. TRANSLATION: Translation questions ask students to change information into a different symbolic form or language. An idea can be expressed in several different forms of communications: pictures, graphs, charts, maps, models, statements in technical language, statements in layman's language, etc. Translation thinking is quite literal and does not require students to discover intricate relationships, implications, or subtle meanings. The student identifies one part of the original communication at a time and translates it into the new form.

   Examples:

   Suppose that an observer classified each of the questions asked by an instructor during a class period and found the following frequencies:

Memory — 10	Interpretation — 2	Analysis — 0
Translation — 6	Application — 1	Synthesis — 0
		Evaluation — 1

   Construct a histogram to present this information to the instructor. (Assume the person answering this question knows how to construct a histogram.)

   Define each of the taxonomy categories in your own words.

3. INTERPRETATION: Interpretation questions ask students to discover relationships among facts, generalizations, definitions, values and skills. This category is more difficult to define because there are many kinds of thinking involved in finding relationships. In fact, all higher levels of the taxonomy involve more complex applications of the kinds of thinking included in this category. Nevertheless, the category remains distinct because of the characteristics of the questions included.

Appendix H (Continued)

The most distinguishing characteristic is that interpretation questions are explicit about what the student should do. The generalizations, criteria for comparison, statistical information, etc., to be used in discovering the relationships are identified in the questions. The student does not need to make decisions about the bases for establishing the relationships.

Examples:

Assuming that the type of questions asked in classrooms direct the kinds of thinking which students do, at what cognitive level would you guess most students were operating in the classroom for which you drew the histogram?

Classify each question which you ask during a lesson according to the Taxonomy of Questions.

4. APPLICATION: Application questions ask students to solve problems that require identification of the issues and the selection and use of appropriate generalizations and skills. Application questions are designed to give students practice in transfer of training and independent use of knowledge and skills.

The distinction between Application and Interpretation centers partly in the instructional content in which the question is asked. The first example included under the Interpretation category above not only specifies what the issue is (Asking Questions) but also is asked in a context in which you know which generalizations and skills you should use. At some later time, we might present you with the following Application problem: "Look at a videotape of a university class and try to determine the cognitive level at which students are operating." Although the tape might be selected because it illustrated questioning techniques, there's nothing in the question which indicates that ASKING QUESTIONS is the issue. Moreover, if the problem were presented after you had focused on several other teaching skills, you would not be led to apply the generalizations and skills related to Asking Questions simply because the context was one in which you were dealing with questioning behaviors. In other words, you would be expected to perceive that the classification of questions was called for implicitly by the question.

Example:

How would you design a lesson plan which would get students to think about the day's subject matter in increasingly complex ways?

5. ANALYSIS: Analysis questions require solutions to problems in light of conscious knowledge of the parts and processes of reasoning. The distinctions between Analysis questions and Application and Interpretation questions is easily blurred since the latter two cannot be answered without some elementary knowledge of logical reasoning. However, Interpretation and Application questions require "common-sense reasoning," whereas Analysis questions require the student to be conscious of the intellectual process he/she is performing and to be able to explain the rules for reaching a valid and true conclusion.

Example:

The Clinic to Improve University Teaching believes ASKING QUESTIONS is an important teaching skill. Analyze the reasoning behind this conclusion.

6. SYNTHESIS: Synthesis questions encourage students to engage in imaginative, original thinking. Unlike the earlier categories of questions in which the course of thought starts with a problem and converges to one correct answer, Synthesis questions begin with a problem that offers a variety of possibilities radiating out to many satisfactory answers. Questions which ask students to create an original story, poem, etc., are not the only Synthesis questions; students may also be required to engage in imaginative, original thought if asked to formulate hypotheses, plan courses of action, design experiments, etc.

Examples:

Design your own system for classifying classroom questions.

Design a training program for teaching assistants in your department.

7. EVALUATION: Evaluation questions ask a student to make a judgment according to some standards he/she designates. They require students to perform two steps: 1) to set up appropriate standards or values; and 2) to determine how closely the idea or object meets those standards or values. Evaluation questions require that students have an understanding of the differences between values, facts, and opinions.

Examples:

Which category of questions do you think is most important?
Should a training program for teaching assistants include training in asking questions.

While the overall goals of education would seem to require questions at every cognitive level, research on classroom questions reveals that approximately 80 percent of the questions asked in classrooms fall in the Memory and Translation categories. Knowledge of the taxonomy of questions may aid instructors in planning for and constructing questions which will encourage students to think and explore ideas at various cognitive levels.

Instructors or observers who attempt to classify questions actually used in classrooms may find it difficult to assign a particular question to one category, since the level of thinking required by a given question often depends upon the context in which it is asked and the responses which it elicits. For these reasons, the taxonomy should not be viewed as a rigid classification scheme into which each and every question must be categorized. It is probably most useful as a guide for instructors to use in planning for a varied intellectual classroom experience and as a rough tool for checking the intellectual level at which most of the questions asked in a given class are directed.

The categories of questions outlined above are classification schemes based largely upon the level of thinking required to answer the question. Questions at any cognitive level may also be grouped according to the functions they serve. Any one of the questions given as examples of cignitive types may be phrased to serve an instructional function as well.

FUNCTIONS OF QUESTIONS:

Centering Questions:

Centering questions strive to focus students' thinking on a particular topic or aspect of a topic. If such questions are carefully chosen, they may also serve to arouse students' curiosity and interest and motivate them to engage in discussion or thoughtful exploration. Such questions may be constructed so that they direct students' thinking to any cognitive level or expand their thinking to include increasingly more complex issues. The distinguishing characteristic is that they attempt to focus students' attention.

Example:

In a group discussion on the Taxonomy of Questions one might begin by asking: "Do you think it would be valuable to have students learn some or all of the categories of thinking?"

(Function: centering; Type: evaluation)

Probing Questions:

Probing questions seek to get students to go beyond their initial contributions or responses to a question. The instructor's cue is the student's response, so probing questions usually occur AFTER a student has responded to an earlier question. Probing questions typically serve two functions: 1) the extention of thought at the same level; and 2) the shifting of thought to another level.

Example:

Suppose a participant responded to the above question by saying, "No, I think it would be a waste of time." One might ask: "What values or standards do you have in mind when you say it would be a waste of time?"

(Function: probing; Type: evaluation -- extension of thought at the same level)

Redirecting Questions:

Redirecting questions attempt to get many students engaged in a discussion or involved in a learning activity. Like probing questions, redirecting questions usually occur after a student has responded to an earlier question or contributed an idea. An instructor may then use a variety of questions to get other students to respond to the initial question or to comment on other students' responses.

Example:

After the participant above has defined his criteria for evaluation, one might ask: "What do the rest of you think about the criteria just listed?" or, "Does anyone have a different opinion about whether or not it would be valuable for students to learn the categories of questions?"

(Function: redirecting; Type: evaluation)

Processing Questions:

Processing questions serve to maintain a classroom atmosphere conducive to productive activity and to heighten students' awareness of the processes in which they are engaging. They focus less on the content of the lesson than on the process of investigation and on students' conduct during, and feelings about, that process.

Example:

Suppose the discussion above progressed and members began challenging each others' ideas about what things are most important for students to learn. Then suppose their challenges became attacks on each others' courses — each accusing the others of spending time inappropriately. At some point, a discussion leader might ask: "Are we getting off the track by discussing each others' courses, or is this discussion moving us toward a more practical consideration of the questions?"

(Function: processing; Type: evaluation or analysis)

SUMMARY:

The interplay of functions and types of questions results in questioning patterns which may or may not help lead students in fruitful directions. It is our belief that instructors who are aware of the question types and functions can plan and teach lessons which are more likely to lead students in productive directions. We do not advocate that instructors prepare rigid lesson plans which would stifle spontaneity and creativity in their classes. However, an instructor can practice specific questioning strategies and develop a repertoire of questioning behaviors which he/she may then utilize in the classroom as occasions for their use arise.

Bette L. Erikson
Clinic to Improve
University Teaching
February 5, 1974

RESPONDING TO STUDENTS' QUESTIONS

RESPONDING TO STUDENTS' QUESTIONS refers to the instructor's ability to create a climate in which students feel free to ask questions, to the instructor's skills in providing appropriate opportunities for questions, and to the instructors facility in responding to those questions in ways which promote understanding and further inquiry.

Creating a climate in which students feel free to ask questions depends a great deal upon the ways in which the instructor interacts with students generally. (For a more complete discussion of this topic, please see INTERPERSONAL RELATIONS and LEARNING ENVIRONMENT.) However, of specific importance here is the instructor's ability to convey a willingness to consider students' questions and to communicate a positive attitude toward students who ask them. The instructor who esks "Are there any questions?" but then quickly moves on to new material not only does not allow students time to formulate their questions, but also gives the impression that this is merely e formality. It takes time to construct a question, end the best questions often take the longest to formulate. Thus, the instructor should not interpret initial silence as an indication that there are no questions.

Even when students do have questions they'd like to ask, they will not ask them if they feel they might be embarassed or belittled. The instructor who attempts to elicit questions by saying, "Those of you who did poorly on the last quiz--do you have any questions?" should not be surprised if nobody asks a question. On the other hand, the instructor might say: "This is a difficult concept, but I think it's important that you understand it...do you have any questions?" or "This is difficult to explain...can anyone formulate a question that might help me clarify it or explain it in another way?" Thus, the instructor reassures students that they will not be seen as ignorant or stupid if they raise questions; on the contrary, their questions may even help the instructor in explaining the material.

In addition to knowing how to invite questions, the instructor must decide when to invite them: anytime during a class; at the end of a class; during discussion or laboratory sections; during office hours; etc. Unfortunately, instructors do not always choose the best times to ask for students' questions. Open invitations for questions sometimes result in interruptions which prevent the instructor from providing adequate or logical explanations. On the other hand, instructors do not always provide time for questions when students most need to ask them--when their understanding or perticipation depends upon

immediate clarification, explanation, or elaboration. It would be unrealistic to expect instructors to provide opportunities for questions et times that would meet the needs of every student. However, thoughtful consideration of variables such as class size, difficulty of material, one's own facility for responding to questions, etc., may enable instructors to make better decisions about when to provide time for students' questions.

Finally, the instructor must be able to respond to students' questions in ways which promote understanding of the materiel, while maintaining a climate which does not inhibit further inquiry. There are a variety of responses that might be made to questions, and the instructor should be able to vary these responses according to the nature of the question and the needs of the students.

1) Repeating the question
Repeating a student's question before responding insures that all students have heard the question. However, this response should be used with ceution. Continually repeating questions which have been heerd and understood the first time can become an irritating mannerism. Moreover, this strategy sometimes has the effect of discouraging students from listening to one another. In classes where interaction among students is desired, it may be more effective to ask students to repeat or clarify their questions when others have not heard or understood.

2) Praising
Praising students for asking questions ("I'm glad you stopped me before I went further;" "I'm glad you pointed out that aree of confusion;"etc.) reassures students that they will not be embarassed by displaying confusion or lack of understanding. Praising students for esking controversial or difficult questions ("Now that's really a good question;" "That question shows you're really thinking about these issues;" etc.) encourages thoughtful inquiry.

3) Answering
Answering questions often seems like a simple task. However, too often students are left more confused than before the question was asked. Sometimes instructors misinterpret students' questions and respond to completely different issues. Effective answers require careful listening. In their zeal to seize the "teachable moment," instructors sometimes attempt to expand students' questions to include broader issues, and then respond in terms of those issues. Unfortunately, the original question is often times not addressed directly and students are left even more bewildered. The instructor who uses "overkill" in answering questions by launching a 5-or 10-minute lecture, when one or two examples would have sufficed, only

produces frustration, boredom, and day-dreaming on the parts of students. Generally, the instructor who answers questions effectively constructs answers which are clear and concise and checks to see whether students have understood before elaborating further or moving on to the next question.

4) Probing
Instructors may help students "think through" and answer their own questions by asking a series of probing questions. Such questions may serve to "break down" a complex question into a series of simpler questions which the student can answer, may suggest analogous situations with which the student is more familar, may imply procedures to be used in solving a problem, etc.

5) Redirecting
Instead of answering a student's question, the instructor may ask other students to respond. Often instructors use this strategy to encourage students to interact with one another and to view one another as resources.

6) Postponing
When a student's question is of interest to only one or a few students in class, it may be suggested that those students consult the instructor or one another after class. An instructor may also suggest postponement of a question if there is not enough time to address it adequately or if the issue raised is to be considered in some subsequent period.

7) Admitting lack of knowledge
If the instructor does not know the answer to a question, usually the best thing to do is to admit not knowing. Once the admission has been made, the instructor might re-direct the question, promise to think about or investigate the topic further, refer students to other sources, etc.

8) Discouraging inappropriate questions
Occasionally students ask questions, not in a spirit of inquiry, but in order to get attention, gain recognition,-sometimes even to embarass the instructor. Responding to such questions in the ways outlined above may only reinforce behaviors which instructors (and other students) wish to eliminate. On the other hand, responses which, in effect, ignore or criticize these students may discourage them, as well as the rest of the class, from asking questions at all. There is no easy solution to this dilemma. The instructor might look for ways to reinforce more constructive behavior from students, thereby reducing their need to seek attention and recognition. Sometimes, in a private conversation, the instructor may help a

student gain insight into his or her behavior and participate more productively. In any case, the decision to respond to a student's question critically should be made only after the instructor has considered the possible negative consequences.

The emotional tone accompanying an instructor's response to questions can either maintain or destroy a climate in which students feel free to ask additional questions. If students sense that the instructor is impatient or angry with questions, they will soon stop asking them. Suggesting that some questions are simple-minded or trivial not only belittles the student who asks them, but also discourages other students from risking similar embarassment. Sarcasm or witty remarks may be entertaining, but carry the same danger that students will avoid being the subject of such cleverness. If, in fact, the instructor is impatient with questions, views them as indications that students have not been listening or doing their homework, cannot resist the temptation to be witty, it's probably better to postpone responding to questions or to suggest that students seek answers from other sources.

Effective performance in RESPONDING TO QUESTIONS, then, requires first that the instructor be able to create a climate in which students feel free to ask questions. Secondly, the instructor must determine when time for students' questions will be most productive--at what points during the sequencing of instruction will students gain most from having their questions considered? Finally, the instructor must be able to respond to questions in a variety of ways, to select the type of response which will most facilitate students' thinking about and understanding of the material, and to make that response in such a way that a climate of inquiry is maintained.

Betts Erickson
Clinic to Improve University Teaching
January 24, 1974

STUDENT PARTICIPATION

Facilitating STUDENT PARTICIPATION refers to the instructor's skills in promoting students' oral participation in classroom activities and in guiding that participation to fruitful directions. Obviously, there are other overt, as well as covert, ways in which students may participate in learning activities -- listening, thinking, taking notes, performing a laboratory experiment, etc. But our primary concerns here are with students' verbal participation in classroom activities and with teaching behaviors which promote such participation.

The contexts within which student participation may be desirable range from: class recitation, where students may be asked to answer questions posed by the instructor; to teacher-centered discussions, where the instructor assumes responsibility for directing students' exploration of ideas; to student-centered discussions, in which the instructor's primary role is to facilitate and monitor interactions among students. In any context, the instructor and students should know how much and what kind of participation is desired.

Beyond informing students that their participation is desired, there are certain teaching skills which serve to promote student participation. Asking questions is one such skill. Effective use of centering questions, probing questions, redirecting questions, and processing questions can increase student participation. Moreover, skill in asking questions at various cognitive levels enables the instructor to guide a students' consideration and exploration of ideas or issues. (For a more detailed description of the types and functions of questions, please see the skill area ASKING QUESTIONS.)

Secondly, skill in responding to students who make contributions or ask questions affects student participation. (For a more detailed description of teacher responses to student questions, please see the skill area RESPONDING TO QUESTION.) There are several response behaviors which are likely to increase student contributions:

1. Simple acknowledgment:
   Simple verbal statements such as "I see what you mean," "mm-hmm," etc. No evaluation of the idea is given, but the student receives feedback that the idea has been heard.

2. Praise:
   Statements such as "good," "right," "that's interesting," etc. Praise may also be given to part of a student's contribution, such as when the instructor says, "Well, I'm not sure all of that is relevant,

but what you said about the political implications is certainly worth considering."

3. Restatement:
   Repeating, rephrasing, modifying, clarifying, or expanding a student's idea are ways of recognizing an idea and emphasizing its importance.

4. Probing:
   Using questions which attempt to get students to rephrase, clarify, or expand their ideas serve not only to let students know their ideas are worth pursuing, but also to elicit additional participation.

5. Redirecting:
   Using questions which invite other students to clarify, expand, or comment upon a student's contribution encourage a greater number of students to participate and to generate interaction among students.

6. Acting upon students' suggestions:
   While opportunities to apply students' ideas or to implement their suggestions may occur less frequently, such direct action can be a powerful reinforcer. The student knows that the idea is worth trying and other students recognize that their contributions will be taken seriously.

7. Preventing discussion monopolies:
   Sometimes student participation is limited because the instructor or a few students monopolize discussion time and extended monologues or engage in conversations which are not of general interest. Cutting short such monologues or esoteric discussions may help facilitate participation from other students.

While these skills are likely to increase student participation, that participation tends to be more or less "teacher-centered." That is, the instructor assumes responsibility for leading students in desired directions, and most interactions will occur between the instructor and individual students. Increasingly, students are asking for opportunities for greater involvement in their learning experiences, and many instructors desire to break away from the traditional instructor-dominated classroom and encourage greater student participation and responsibility. Advocates of the discussion method argue that a member of any organized society must be able to work effectively in groups, that students who gain skills in group membership and leadership stand a better chance of operating cohesively and productively in society, and that classroom discussions provide opportunities for students to acquire and develop these skills at the same time as they are gaining mastery of the academic content.

However, classroom discussion methods pose special problems. With the instructor's roles as information-giver and source of feedback limited, and opportunities to provide organization and structure curtailed, it is

apparent that a heavier burden falls upon students to carry out these functions. Unfortunately, it's often the case that students lack the discussion skills necessary to assume these responsibilities, and many discussions are less efficient and productive than the instructor might hope.

The instructor who wishes to increase student participation in discussions and to improve the productivity of discussion groups may find the literature on group dynamics a useful resource. Knowledge of some basic group dynamics principles and skill in using that knowledge can be useful for improving classroom discussions. Study of the interactions in various groups suggests that there are certain discussion behaviors which seem to be common to all effective groups. These behaviors are outlined in the following catalogue of task and maintenance behaviors.

TASK BEHAVIORS:

Task Behaviors include behaviors engaged in by group members for the purpose of solving the problem or accomplishing the work which the group has undertaken.

Initiating:	offering new ideas relating to the group's task; suggesting how the group might begin to proceed, etc.
Information Seeking:	requesting factual or authoritative information relevant to the group's concern.
Opinion Seeking:	seeking clarification of opinions, beliefs, or values underlying suggestions made or relating to the task at hand.
Information Giving:	contributing facts or authoritative information relating to the group's concern.
Opinion Giving:	stating one's own beliefs, opinions, attitudes, values, etc., which are relevant to the group's concerns.
Orienting:	calling attention to group's stated goals and redirecting discussion when group departs from agreed directions or procedures.
Coordinating:	clarifying relationships among ideas and suggestions; pulling ideas and suggestions together; coordinating activities or contributions of various members of group.

MAINTENANCE BEHAVIORS:

Maintenance behaviors include behaviors engaged in by group members for the purpose of building unity and maintaining an atmosphere in which individuals feel free to contribute and communicate.

Gatekeeping:	attempting to keep communication channels open by facilitating and monitoring the participation of group members.
Encouraging:	accepting and supporting the contributions of group members, whether those contributions elicit agreement or disagreement.
Harmonizing:	attempting to mediate differences among group members or to resolve conflicts.
Energizing:	urging or stimulating the group to action.

Each of these behaviors may be performed by one member of a group, or many members may perform a given behavior at different times. When a particular behavior is repeatedly performed by the same person, the behavior becomes a role for that person. For example, although several members may at some time during a discussion perform "initiating" behaviors, not all of them will do so repeatedly. Only the person who consistently and predictably "initiates" in groups takes on the role of "initiator." While the words "role" and "behavior" may appear to be used interchangeably at times, it will be useful to keep their distinction in mind.

The concept of leadership may also be understood in terms of discussion behaviors. When one person consistently performs several of the behaviors, that person becomes increasingly responsible for the direction and progress of the group as a whole. Operationally, that person assumes a leadership role.

Knowledge of these discussion behaviors may help an instructor in a number of ways. Often, problems in group discussion arise because one or more of the task or maintenance behaviors are not performed by anyone in the group. For example, discussion groups which never seem to accomplish anything because members frequently get side-tracked or go off in many directions may be suffering because no one performs "orienting" behaviors. Or, discussions which never get off the group because nobody participates may lack someone to perform "encouraging" behaviors. Knowledge of required discussion behaviors facilitates the identification of causes of common discussion problems and enables the instructor to shift roles and focus upon inadequately performed tasks in order to improve the quality of discussions.

Appendix H (Continued)

Secondly, knowledge of discussion behaviors allows the instructor to determine who performs the various discussion behaviors. By noting which students tend to engage in certain behaviors regularly, the instructor may be able to identify and reinforce potential leaders. Or, if the instructor and one or two students tend to perform all the discussion behaviors, the instructor may find it useful to devise ways to distribute various responsibilities among other group members in order to increase the participation of all students.

Thirdly, the instructor may use knowledge of discussion behaviors as a tool to help students acquire and strengthen effective discussion skills. Often the instructor must perform many of these behaviors, at least initially, because students are not accustomed to performing them in classrooms. Typically, students have had opportunities to practice giving information or opinions, but their experiences and skills in performing many of the other behaviors are somewhat more limited. The instructor knowledgeable about group behavior may find opportunities to discuss the various behaviors and roles with students, help them to identify their own role choices, and provide opportunities for them to experiment with and practice alternative discussion behaviors.

For the instructors, then, knowledge of the various discussion behaviors increases their ability to understand and alter their own roles in discussion groups. Secondly, this knowledge provides the conceptual tools for identifying students' role choices, to understand the impact of these choices on the group, and to reinforce or alter these roles when appropriate. Finally, the instructors may use their knowledge of discussion behaviors to help students increase their repertoire of discussion skills and to become more effective and productive participants.

Skills in asking questions and responding to students who make contributions facilitate student participation in all classroom contexts. However, because the instructor's role in discussion groups is somewhat different from the traditional teaching role, additional skills are required if these groups are to be productive learning experiences. The outline of task and maintenance functions in groups may help instructors identify strengths and weaknesses in their classroom discussions and develop improvement strategies which will increase their effectiveness.

TEACHING SKILL: FACILITATING STUDENT PARTICIPATION

Description of Problem:

Five Rhetoric instructors had identified Facilitating Student Participation in small group discussions as an area which they wished to improve. Since all five instructors had diagnosed problems in asking questions which would generate fruitful discussions and in responding to students in ways which would encourage further discussion, a teaching improvement specialist conducted a workshop focusing on these two skills.

Improvement Strategy: Workshop on Asking Questions and Responding to Students

Before meeting with the instructors, we had selected a videotaped sample of a class discussion (in this case, a tape of a rhetoric class) and had duplicated copies of the materials (student writing samples) used in the class discussion. For the sake of time, we selected two segments of the videotape, each about five minutes long, which illustrated a variety of questioning techniques--some used effectively by the instructor, and others used not so effectively. This selection was purposeful, since we were interested in demonstrating the effects of the not-so-skillful, as well as the skillful, use of questions on classroom interaction.

The workshop lasted two hours and proceeded according to the following outline.

A. Begin tape where the instructor starts discussion of the writing sample and play until he asks his first question. Stop tape and discuss:
   1. What responses might students give to this question?
   2. Did the question require convergent or divergent thinking on the parts of students?
B. Start tape and play until first question has been answered. Stop tape and discuss:
   1. Did we predict students' answer(s) accurately?
   2. Was student answer clear; i.e., was it clear what student was thinking or trying to say?
   3. Was student answer complete? What other information might you have wanted from student?
   4. How else might you have asked the initial question to elicit more desirable student responses?
   5. How might you respond to students' answers?

Appendix H (Continued)

C. Start tape and play until instructor has responded to student's answer. Stop tape and discuss:

1. How did instructor respond to student(s) who answered the question?
2. How might you have felt if you had been these students?
3. Role-play alternative ways for responding to students. At this point, we introduced 5 categories for responding to students and asked instructors to role-play each kind of response: (except 'e'.
   a. praising, acknowledging;
   b. restating, clarifying, elaborating, expanding;
   c. probing questions;
   d. redirecting questions;
   e. rejecting--ignoring or criticizing student responses so that the effect is one of a "put down."

D. Repeat A, B, and C once or twice more.

E. Play entire tape segment through again. Discuss "question-answer-response" sequences:

1. What kinds of questions does the instructor generally ask?
2. Are the instructor's questions always clear?
3. What kinds of answers do students generally give (fact, opinion; specific information, generalizations; etc.)?
4. How does instructor typically respond to students who contribute (in terms of the five categories)?
5. What kinds of interactions result from the instructor's questions and responses to students?
6. What alternative questioning and responding techniques might produce different interaction patterns?

Follow-up Strategies:

The feedback that we received on the evaluation questionnaire which we asked instructors to complete immediately after the session suggested that they had found the workshop very worthwhile. Moreover, they were anxious to look at their own tapes again to examine their questioning and responding behaviors more closely. Thus, instructors reviewed their own tapes immediately following the workshop and identified specific questioning and responding techniques which they wished to practice. Microteaching sessions more than scheduled for each instructor.

Bette Erickson

Improvement Strategy

Appendix H (Continued)

STUDENTING SKILL: PARTICIPATING IN DISCUSSIONS

Description of Problem:

Students and teachers alike frequently report that they are not satisfied with the discussion sections and seminars in which they are members. They often complain that discussions are uninteresting, unstimulating, and unproductive in terms of what is learned. Although instructors frequently attribute unsuccessful discussions to students' failure to do assigned homework or to their seeming inability to think with any sophistication, instructors nonetheless often accept at least partial responsibility for unproductive discussions and frequently seek help in acquiring or improving their discussion leadership skills.

On the other hand, students rarely see themselves as responsible for unsuccessful discussions or as capable of improving them. Most often they perceive the instructor as being at fault ("The instructor is a poor discussion leader"), or they may blame other students ("Only a few students participate; the rest just sit").

The improvement strategy described below is designed to improve the quality of classroom discussion by focusing exclusively upon student participants in such groups. Its purpose is to help students recognize how they may improve discussions and develop the skills required to facilitate more productive discussions.

Improvement Strategy: "Micro-studenting" sessions to Improve Discussion Skills

A. Identification of the "Studenting Group"

The first step in this strategy requires that a number of students be identified and brought together in a "studenting group." The number of students participating in this group might range from 5 to 15. With few students, each individual might expect to receive more practice; with 15 students, each individual would have the opportunity to practice his or her skills in discussions which were more comparable to real classroom settings. Students probably will benefit most by participating in groups of varying size.

B. Diagnostic Stage

Once the studenting group has been formed, students are asked to participate in a discussion activity, such as the NASA Exercise (attached). This discussion is videotaped for later

review by discussion participants.

Before reviewing the tape, the supervisor explains that specialists in group dynamics have identified a number of discussion behaviors which must be performed by some member of a group if discussions are to be productive. Each student in them given a list of these "Task Behaviors" and "Maintenance Behaviors" (attached) and is asked to learn the list well enough so that he or she can identify each of the behaviors. Time is given to clarifying the behaviors and to considering examples of each.

After students have familiarized themselves with this list of behaviors, they are asked to look at the videotape of their discussion and to identify the behaviors they perform. Students are asked to identify the specific behaviors they perform each time they participate in the discussion.

When students have completed this analysis, they are asked to classify their discussion behaviors in the following categories:

Behaviors I performed most frequently:

Behaviors I performed occasionally:

Behaviors I performed not at all:

Students may then be asked to share these lists in order to determine which behaviors were performed in the group as a whole most frequently, occasionally, and not at all. This information then serves as the basis whereby students may identify their discussion strengths and weaknesses and may decide which specific behaviors they wish to practice.

C. Training Stage

The training session is an adaptation of microteaching procedures. Each student is asked to identify one discussion behavior which he or she wishes to practice (e.g., "initiating," "information seeking," "gatekeeping," etc.). Four or five students are then selected to form a "micro-studenting" group. Repetition of these groups should allow each individual to practice a different skill so that not all members are trying to do the same thing. A group in which all students were practicing "initiating" would look a bit bizarre and would not be terribly productive.

Students are then given, or asked to suggest, a topic which they discuss for 5-10 minutes. This discussion is videotaped. After the discussion session is completed, students are asked to review the tape and critique their performance of the focal skills. The critique session is followed by another discussion in which students attempt to incorporate the suggestions they have received. This process is repeated until students are satisfied with their performance of the particular discussion behavior they are practicing.

D. Follow-up Stages

The "micro-studenting" strategy would seem rich in potential variations. Students might practice individual behaviors, a combination of behaviors, or all of the behaviors. If they feel uncomfortable in group discussions, they might start in small groups and move to larger groups as their confidence builds. They might practice their skills in discussions about a variety of subjects or in different kinds of discussion groups (e.g., open discussions, problem-solving groups, brainstorming groups, etc.). Students might wish to invite an instructor or "naive" students (students who are not participating in the studenting group) to be members of the groups during training sessions.

In addition to obtaining feedback in the micro-studenting sessions, students may wish feedback on their performance in actual classroom discussions in which they are members. With the instructor's permission, the supervisor might arrange to videotape these classes and make the tapes available for students to analyze and critique. Or, students might ask the instructor, other students, or the supervisor to observe these classes and monitor the student's discussion behaviors.

NASA Exercise

Instructions:

You are a member of a space crew originally scheduled to rendezvous with a mother ship on the lighted surface of the moon. Due to mechanical difficulties, however, your ship was forced to land at a spot some 200 miles from the rendezvous point. During landing, much of the equipment aboard was damaged and, since survival depends on reaching the mother ship, the most critical items available must be chosen for the 200 mile trip. Below are listed the 15 items left intact and undamaged after landing. Your task is to rank order them in terms of their importance for your crew in attaining them to reach the rendezvous point. Place the number 1 by the most important item, the number 2 by the second most important, and so on, through number 15, the least important.

___Box of matches
___Food concentrate
___50 feet of nylon rope
___Parachute silk
___Portable heating unit
___Two .45 calibre pistols
___One case dehydrated Pet milk
___Two 100 lb. tanks of oxygen
___Stellar map (of the moon's constellation)
___Life raft
___Magnetic compass
___5 gallons of water
___Signal flares
___First aid kit containing injection needles
___Solar-powered FM receiver-transmitter

TASK BEHAVIORS:

1. Initiating: suggesting how the group might begin to proceed, offering new ideas relating to the group's task; etc.
2. Information Seeking: requesting factual or authoritative information relevant to the group's concern
3. Opinion Seeking: seeking clarification of opinions, beliefs, or values underlying suggestions made or relating to the task at hand
4. Information Giving: contributing facts or authoritative information relating to the group's concern
5. Opinion Giving: stating one's own beliefs, opinions, attitudes, values, etc., which are relevant to the group's concerns
6. Orienting: calling attention to group's stated goals and redirecting discussion when group departs from agreed directions or procedures
7. Coordinating: clarifying relationships among ideas and suggestions; pulling ideas and suggestions together; coordinating activities or contributions of various members of the group

MAINTENANCE BEHAVIORS:

8. Gatekeeping: attempting to keep communication channels open to all members by facilitating and monitoring their participation
9. Encouraging: accepting and supporting the contributions of group members
10. Harmonizing: attempting to mediate differences among group members or to resolve conflicts
11. Energizing: urging or stimulating the group into action

Paul Adams
May 3, 1975
Clinic to Improve
University Teaching

CLOSURE

The teaching skill of closure is one of the simplest and therefore one of the most difficult to do really effectively. Closure entails summarizing the main points of the lesson or part of a lesson. Closure is complementary to set induction, but it is not simply a mirror image of the introduction to the lesson. Presumably students have undergone a learning experience during the lesson to which they have contributed some of their own experiences. Hence, closure seeks to formulate the main points of the lesson, in summary form, whether these points have been made by the teacher or by the students.

Introducing Closure

Interrupting the flow of a lesson in order to review progress to date helps to re-emphasize the points covered, but also it provides an opportunity to relate these points to the work covered in previous lessons, and to hint at what is about to be discussed in the near future. The teacher is primarily concerned in helping the students understand the drift of the discussion, not the other way round. Thus, by organizing content around a central theme, the next few points can be deductively cued for the students. "As we are talking about socialization in relation to North America, five main parts follow..." "We can see there are three subtopics under each major heading." Other key words or phrases might be "Before continuing, let's draw some conclusions from the discussion so far" or "I think we can see that without a system we cannot achieve our objective."

Asking students to state what they see as the main points of the discussion allows differing interpretations to be brought in. However, dropping on a single student to see if he/she has been alert enough to record all that teacher has revealed does not provide an adequate evaluation. Statements such as "What do you see as the main core of this discussion" are much better than "Who can summarize what I have just said?". Closure also allows the teacher to project a theoretical discussion into a practical demonstration of the concepts. For example, "Now that we recognize the main components and attributes of the species Lepidoptera, what other species exhibit similar metamorphic qualities." Student input will then demonstrate the degree of understanding about Lepidoptera, as well as the strengths and weaknesses of biological classifications in general. By allowing the students to demonstrate what they have learned closure will be self-evident, whether the lesson time is concluded or not. Likewise there is nothing wrong in repeating short summaries at regular fifteen minute intervals, if only because many students may not have been paying attention previously.

Improving the Skill of Closure

Working in the microteaching laboratory is one of the most effective ways of working at closure. Whether observing model teachers on tape or film, or practicing before a small class and being recorded on videotape, the opportunity to test out the reception of closure statements, or cues, and the resultant feedback is very illuminating. Often the instructor sums up to his/her satisfaction only to find that the logical sequence is obvious only to him/her. Secondly, the summary may be recalled but not the reasoning behind it. The doctrine of the separation of powers described as the opportunity for both Congress and the President to do nothing and then blame the other for lack of progress, may be a sardonic comment or a genuine misunderstanding of the principles involved.

Finally, closure is a natural result of such skills as logical organization, level of challenge, and establishing a learning set, and it is often more convenient to practice them together. The very common sense attributes of the skill of closure means that most instructors will rarely receive a poor rating on that skill alone. However, if there is a halo effect which appears across several skills, then a careful, systematic, clarification of the flow of instruction by means of incisive summaries may well be the key to progress on all of them. If the students cannot achieve closure for themselves, then the point of the entire lesson may be lost, and they thus seriously interfere with the ability to follow subsequent lessons. Unlike a painter who portrays a two-dimensional theme and leaves it to posterity, the teacher must explain his production on the spot, or all his artistry may vanish in the time and space of an empty lecture hall.

Daniel Sheehan
Clinic to Improve
University Teaching
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Evaluation

Evaluation skills refer to the instructor's ability to recognize and specify the criteria he will use to make decisions about the quality of students' performance or learning, to collect reliable, valid data with regard to their performance on those criteria, and to provide adequate feedback to students on their progress.

Specification of Behavioral Objectives

Evaluation of students must be considered and planned for long before instruction begins. The instructor must begin to think about stating behavioral objectives for the students, i.e., determine as specifically as possible what it is students are to learn and what performances will indicate that they have, in fact, learned it. It is important that objectives be stated in behavioral, observable terms to insure the objectivity of the evaluation, so far as it can be insured. A procedure for constructing behavioral objectives is well beyond the scope of this paper. There are many useful works published on this; recommended is R.F. Mager (1962), Preparing Instructional Objectives.

There is, obviously, no one best way to determine goals, nor is there any objective standard against which to judge goals once they are established. The important thing is that goals and objectives be spelled out explicitly and operationally both in the mind of the instructor and to the students.

Many believe it is advisable for the instructor to collect data about three things: (1) the knowledge, aptitudes, and needs of the students upon entering the course (input); (2) the course itself, and its ongoing (and possibly different) effects on students (process); and (3) knowledge and need reduction of the students upon completion of the course (product).

Measurement of Input

It is important that student pre-knowledge, aptitudes, and needs be measured before course instruction begins. Knowledge can be measured by an achievement test based on the course material - perhaps something similar to the final course examination. Course content can be geared towards that material unfamiliar to students.

It is advisable, also, to utilize aptitude tests to determine

how the students learn, i.e., what kinds of activities, assignments, etc., are most meaningful to them. It is essential that students be evaluated on their performance of something that is meaningful to them.

Perhaps most important is that the course meet the needs of the students enrolled in it. In order that this be accomplished, it is necessary that some variety of needs assessment be conducted. There are instances in which the students are the best judges of their needs, in which case a student questionnaire, class discussion, and/or individual conferences can allow for student input. And there are cases - particularly if the course is a part of the student's professional training where the instructor (who is already a professional in the area, and should know what it takes to get the appropriate skills) alone can best determine what the students need from the course. Most cases will come somewhere in-between which means some sort of needs assessment should be performed.

Measurement of Process

Measurement of the course and its ongoing effects on students involves regular monitoring of at least three things: (1) student opinion about various aspects of the course (satisfaction/dissatisfaction/specific suggestions for improvement, etc.); (2) student progress towards acquiring the competence it has been determined they should have in the course objectives; and (3) the degree to which student needs, however determined, are being met.

The first and third of these can be measured by a questionnaire given to the class, a class discussion, and/or by individual conferences with students. The second can be evaluated through tests, quizzes, papers and other assignments, class participation, and individual conferences with students. It is critical that the instructor both (1) check students' progress toward goal attainment regularly, and (2) provide frequent feedback to students on their progress. The first is necessary if course adjustments are to be made - or if special arrangements are to be made for individual students (remedial instruction, etc.). The second is necessary so the student is aware of progress toward accomplishment of goals so that adjustments can be made if necessary.

Measurement of Product

Student knowledge gain and need reduction (which should be the over-arching goals of any course) can be measured in much the same way that needs and knowledge were measured before the course began. A criterion-referenced test, a final paper, and/or individual conferences can provide means of evaluating knowledge gain. A needs assessment - conducted in a way similar to the initial one - should, if done properly, detect need reduction.

Testing Skills

Since testing plays such a prominent role in evaluation, a word needs to be said about a norm-referenced vs. criterion-referenced test. A norm-referenced test is designed to compare a student's performance to the performance of other students on the same test. It is "principally designed to produce test scores suitable for ranking individuals on the ability measured by the test" (Hambleton and Novick, 1973). Hence, when items are chosen, the primary consideration is whether or not they will help spread the test scores. Norm-referenced tests are not typically intended to be diagnostic tools.

Glaser and Nitko (1971) define a criterion-referenced test as "one that is deliberately constructed so as to yield measurements that are directly interpretable in terms of specified performance standards." The concern in criterion-referenced testing is how much the students know of the subject matter in an absolute sense, not how much more or less they know than their peers. For example, the concern may be how many addition problems a student is able to solve correctly - not how many more or less the student is able to solve than other members of the class. Criterion-referenced tests are far more useful than norm-referenced tests in cases in which instruction is individualized; almost always, criterion-referenced tests are the type that should be used in evaluating students. At the very least, the instructor should understand the difference between the two, and not use either for the purpose for which the other was intended. If the instructor wishes to compare students to one another, a norm-referenced test is best; if the purpose is to find out how much knowledge a student has in a particular area, a criterion-referenced test is best.

Tests used should be as reliable and valid as possible. Validity is particularly important; ordinarily, the classroom teacher need worry somewhat less about reliability (does the test measure the same thing consistently in repeated applications) than about validity (does the test measure what it is purported to measure). Particularly important with regard to the criterion-referenced test is the notion of content validity.

"Content validation," writes Kerlinger (1964), "is guided by the question: Is the substance or content of this measure representative of the content or the universe of content of the property being measured?" For example, if the instructor is concerned with students' ability to add two-digit numbers, it is necessary for test items to fairly represent all possible two-digit number addition problems.

Content validity is established most typically by subjective judgement as to whether or not the test measures the content of the instruction (the only objective method involves the use of item generation rules, the applications of which are very narrow). The best procedure seems to be to put together a panel of content

area experts and ask them to judge the items for their relation to the course content.

The instructor must be concerned not only with the content validity of the material - there must also be a concern with the relation between the level of knowledge of material expected of the students and the level of knowledge required by the test items. If the instructor wants his/her students to be able to simply recall information, it is important that he/she not ask them to interpret it; if wishes them to be able to synthesize, for example, those concepts, he must not simply ask them to recall the concepts. The test items, in other words, must be consistent with the goals, however set, for student achievement.

The point has already been made, but bears re-emphasis, that students should be aware at all times of the criteria against which they will be judged and the tools that will be used in their evaluation. In addition, feedback with regard to their progress should be given as frequently as possible.

Appendix H (Continued)

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Christpher Daggett
Clinic to Improve University Teaching

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LEVEL OF CHALLENGE

Level of Challenge refers to the instructor's skills in selecting course objectives, content, and activities which challenge students' conceptual abilities but which are not too difficult for students to master. An appropriate level of challenge is essential for holding students' interest. If the material is too difficult, students may become discouraged, frustrated and inattentive; if material is too easy, students may become bored and restless.

Level of Challenge should be considered during the initial planning for the course. This includes the design of lectures, the selection of text books or other reading materials, the nature of assignments, the pacing of assignments, the nature of classroom activities, the selection of learning aids in and out of class, etc.

Important to an instructor's employing an appropriate level of challenge is strict attention to individual student needs. Students within a class are often at different levels of progress and learn at varying paces. As a result of this, an instructor needs to design a course with different levels of challenge in the content. In other words, the content level should be reflective of the cognitive and affective level at which students are capable of operating. In recognition of student differences in cognitive and affective levels, an instructor may design a number of questions, readings, activities, etc., which are at varying levels of difficulty. (Please refer to the skill of Asing Questions). Then, in class, the instructor can ask each student the questions which are most appropriate for him or her. In this manner, each student is able to experience some degree of success while learning the course material.

As mentioned above, the appropriate level of challenge is likely to be different for each student. This makes it difficult for the instructor to determine how to select the course content. Typically, decisions concerning level of challenge are made for in advance of the course,

irrespective of these individual differences. The result is that students become disinterested or frustrated and the course is unsuccessful. The instructor may employ pretests and periodic checks on student progress to deal with the problem.

Testing the Appropriate Challenge Levels

Pretesting is an effective method for determining the desirable level of difficulty for each student. Pretests can help an instructor in determining the amount of material to include in the course, the difficulty level of that material, and the pace at which it should be presented. Emphasis here on the use of a pretest is not meant to imply that the course should not be designed before giving a pretest. On the contrary, good courses are designed well in advance of the time they are to be given. However, the design should be made with enough flexibility to be able to respond to assessed student abilities. In this fashion, courses become more attuned to student needs.

Generally, pretests are given during the first class of the courses, and can be designed to answer two basic types of questions. One has to do with whether or not students have the necessary learning skills for undertaking the course. For example, are students good note-takers, can they organize for themselves what has been said, can they read rapidly with good comprehension, etc. The other type of pretest is designed to assess the knowledge that students already have relative to the course. Have students covered the material before, have they touched upon it in other related courses, or have they never before encountered it? Again, by determining the level of student mastery, an instructor will be able to design learning experiences for the course more appropriately.

Periodic checks on student progress should also be used to determine the optimal level of challenge. Students may pick up the materials far more quickly or slowly than the instructor expected, indicating that adjustments are needed.

Effective ways of checking on student progress.

1) Asking students directly. Many students probably have had the frustration of encountering a teacher who repeats some information too many

time, or who proceede entirely too quickly. Often, a simple question such as "Are you with me?" or "Is anyone confused?" can help to determine whether or not students need more or less of an explanation.

2) Checking student non-verbal cues. When students appear to be puzzled, frustrated, or restless, it could be a sign that the material is either too easy or too difficult.

3) Short question and answer periods. An instructor may check student progress by asking a sample of students questions pertaining to the content just covered. Although not a comprehensive check, it does give some indication as to whether or not students are picking up the material.

4) No-fault quizzes. No-fault quizzes are non-graded quizzes. They give an instructor an idea of how all of the students in the class are doing. No-fault quizzes are diagnostic in nature — the results carry no weight in terms of evaluation, but are used solely to determine whether or not alterations in the course need to be made.

In summary, Level of Challenge refers to the selection of course objectives, content, and activities which are at an appropriate level of difficulty for students. Proper level of challenge may be determined by use of a pretest of student learning skills and/or content knowledge and periodic checks on progress through asking students directly, checking for student non-verbal cues, short question and answer periods, or by no-fault quizzes. If at the proper level of challenge, a course will be much more interesting to both students and the instructor.

Paul Adams
June 4, 1975
Clinic to Improve
University Teaching

METHODS AND MATERIALS

Only recently has there been much progress in the systematic attempt to examine the decision-making process which matches instructional materials, teaching methods, and learning outcomes. The design of instruction includes four main stages (1) objectives, (2) the organization of the course material (range, level of difficulty, content, scope, sequence), (3) methodology (style of instruction, degree of student participation, media, learning methods), (4) evaluation. The emphasis in this skill area is therefore the perceptive, systematic, and constructive use of variety in teaching techniques and materials, such that there is maximum flexibility in the provision of learning opportunities.

Matching materials and methods.

There is a two-sided empirical lag hanging over the constructive use of teaching innovations and technical advances. One is the lack of specific knowledge by the instructor of how to use a medium most effectively, and the other is a lack of appreciation or self knowledge by the student as to which learning style works best for him/her. The amount of exposure to different teaching techniques that a student has experienced will be at best haphazard, while the teacher receives very little help in deciding what form of instruction is most effective for which kind of student.

Tackling this problem successfully requires short range answers to a number of questions:

(i) Is the predicated pattern of instruction determined by a relatively well defined procedural sequence?
(ii) To what extent does the instructor wish to control the responses of learners to any instructional sequence?
(iii) What value is placed upon the exact replicability of an instructional stimulus?
(iv) How important is a precise evaluation or feedback system for the success of a particular course?

The answers to such questions will provide the necessary framework for determining which technique or medium is preferable for which teaching unit. It is also important to remember that evaluative studies of any audio-visual techniques as against verbal instruction are rarely generalizable precisely because the sequence in which a film or tape is used is different. One method used in one situation may be capable of proof that it is superior, but that only means at best that this method can be hypothesized as useful in other sequences and situations. (Roshal 1960).

The customary way of answering the four questions outlined above is to ask further questions. "What do you want to accomplish?" "Do students have any input into the way course objectives are decided or modified?" and so on. Assuming that these course objectives have been clarified then a quick glance at a schemata such as that outlined here might help to determine which medium is best for which section of the course.

Appendix H (Continued)

	Instructional Sequence	Desired Applicability	Methods or Media	Evaluation of Learner Response
Unit 1	Introduction	Understanding of course goals	Open	Possible course pretest to determine level of prior knowledge
Unit 2 & 3	Factual data	Memorization Very important	Self instructional methods, film, video, computer, teaching machine, T.V., etc.	Self examination and evaluation
Unit 4	Student use of examples	Student demonstration in class or lab	Video, tape recorder, role playing, lab equipment	——
Unit 5	Further factual Data	Memorization	Same as 2 & 3	Self evaluation
Unit 6, 7 & 8	Individualized project assignments	Demonstrated competence in use of concepts or materials	Open	Student controlled demonstrations
Unit 9	Closure	——	Determined by nature of assignments	Course exam or discussion and feedback of continuous assessment

The main concern for matching materials, methods, and objectives is precisely that of maximum suitability given the instructional sequences of the course. No one method is useful all of the time. McKeachie's description of the purposes of role playing can be adapted to give a good indication of the advantages of this kind of approach. (i) To give students practice in using what they have learned. (ii) To illustrate principles from the course content. (iii) To develop insight into interpersonal learning problems. (iv) To provide bases for discussion. (v) To maintain or arouse interest. (vi) To provide a channel in which feelings about the course or problems encountered there can be successfully communicated. (1969:115).

The learning principles of student participation, continuous feedback, and peer groupings, leaving enough space for individual initiative and personal study, ensure an open ended instructional sequence, provided that the instructor is actively seeking ways to maximize these principles. The adroit manipulation of methods and materials goes a long way to insure that maximization of learning opportunities.

Improving Flexibility.

As circumstances vary so widely there is no packaged way to match up teaching methods with instructional hard and software. Further, for this particular skill area it is probably less fruitful to talk in terms which are content free. The secret seems to lie in looking at old subject matter with fresh eyes. Possibly the curriculum has become too narrow; too many traditional academic assumptions are being made and not tested; minor tinkering with the lecture format is substituted for a thorough course evaluation, student input ignored, people lose heart when their first faltering steps appear to fail, and so on. Conniving with colleagues is a first step out of this conundrum; team teaching with intra or inter-department members is another; a third might be to combine various activities under the rubric of a single course. This last method is the most difficult but promises much greater rewards. It seeks to combine academic, practical, expressive, and psychomotor learning methods in one integrated unit which then evaluates performance according to the individually stated objectives and activities undertaken at the outset.

Let us consider an example:

Subject: Arthur Miller; Witchcraft, and The Crucible.
No. of Students: 400
Level: Freshman, Junior
Organization: Two lectures to entire group per week
8 small groups of fifty will meet separately in a hall or classroom suitable for theatrical productions (stage, lighting, projector, etc.) Each group once a week.
Length of Unit: 3 weeks

The six lectures are divided up between a theology professor, (2 lectures on witchcraft and the Puritans in North America) a drama professor (2 lectures on interpreting Arthur Miller by a director) a social historian (1 lecture on McCarthyism and The Crucible) and drama students (1 session on dramatic presentations of scenes from the play). The smaller groups will obtain their membership by students signing up (to a maximum of 50) for the tasks and presentations preferred. These might include, watching a videotape of the play, listening to a taped interview with Arthur Miller, rehearsing for a performance of the play, buzz sessions to discuss questions raised (student or instructor led), creating a collage of the '50s, building scenery and stage designs for production of The Crucible, rewriting certain scenes in a different context (the 1970's, the Middle East, Mau Mau Africa, etc.), collecting and analysing critical comment on the play, conducting a contextual analysis of the play's structure, etc. The one independent study which is mandatory is a complete reading of the work and certain extracts about it which are perused and distributed beforehand. Evaluation is as varied as the group sessions but might include an examination of the way the stated course objectives have been utilized; the degree of creativity shown; the level of understanding of the play; and appreciation of the way it reflects a certain socio-historical context, or the play's contribution to the development of American thought and literature. Whether the evaluation method was multiple choice, essay type, or demonstrated competence would be determined by the learner's frame of reference rather than traditional academic methods enforced quite irrespective of the learning medium employed.

Conclusion

The above example illustrates the kind of flexibility which can be built into many teaching/learning experiences. It is variety, appropriateness, and creativity which helps to establish an exciting learning environment. Similarly, other skill definitions such as individualization, learning environment, evaluation, student participation, and creativity, should be consulted in order to re-examine the ways in which a particular course could be presented. Matching instructional materials, teaching methods, and learning outcomes, may not be as yet an exact process, but this adds rather to the flexibility of the teacher than to the impossibility of the task. The rewards for success, even on a limited scale, far exceed the risks and/or work involved in the preparation of the materials.

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Paul Adams
The Clinic to Improve
University Teaching

Appendix H (Continued)

Creativity

Jerome Bruner (1962) defines creativity as the occurrence of "effective surprise" in the individual producing a work and/or in one who comprehends that work. By effective surprise Bruner means an experience of "the unexpected that strikes one with wonder and astonishment." Such experiences, he continues, "have the quality of obviousness about them when they occur, producing a shock of recognition following which there is no longer astonishment (p.18)" Feldman (1973:13).

This definition closely shadows Piaget (1971) who states that once a child has experienced a sudden insight that results from a shift in perspective there is an immediate reaction as to the necessity and obviousness of the conclusion (p.5).

Like Piagetian stages, creativity is essentially a by-product of the learning situation and not an analysis of means/ends which has the stated goal of an expressed competency outcome. Necessary and obvious conclusions must be the result of a discovery learning process and not a precondition.

Given this assumption it is axiomatic that changes in mental operations are achieved by means of constructions that recombine existing elements or reorder former experiences. Douglas-Brown (1968:164) translates this into the classroom by stating that "the teacher must constantly find new ways to communicate old ideas and to nurture the development of ideas and understanding in his students." While lectures "are no substitute for the expensive process of helping the individual student hammer out an analysis of values, relationships, judgments, and proofs in his own mind" (ibid: 167).

nevertheless, as will be shown, they do form part of the process which may result in creativity.

Creativity as Process

The first stage toward creativity is determined by mastery. By this is not intended near absolute mastery which will often be required to produce epoch making breakthroughs, but the relative mastery which is necessary before progress can be made towards more complex issues. A good lecture is creative in so far as it enables students to achieve cognitive or affective levels which hitherto they were incapable of reaching. This is in part a content oriented question, but it cannot be divorced from method. It is the symbiosis between content and method that can produce the osmosis of creative thought.

In the classroom creative strategies depend partly upon an enriched environment which can be physical, cognitive, or methodological. The physical might include different perceptual displays, rearranging classroom furniture and lighting, using varied locations, and allowing students to use or create their own apparatus. Methodological variety ranges from different teaching strategies; lecture, discussion, no fault quizzes, teacher centered versus student centered approaches, and catering for varied learning styles. A flexible teaching style is one of the few certain facts which have emerged from educational research as a sine qua non of good teaching. The more creative the teacher the more likely are the greatest number of students to make substantial progress. Cognitive strategies which use the content of the course creatively depend on the above methods combined with a determination to move away from "one right answer/one way to learn" to "no single right answer/endless ways to learn."

The second creative stage requires a temporary suspension of judgmental decisions. In order for a teacher to use imagination to the fullest extent it is important to defer the process of evaluation until the gathering of ideas is completed. To quote Douglas Brown, "the test of a good teacher is what he does to the student in the drawing forth - the education - of the student's powers of clear thinking, analysis, orderly accumulation, evaluation, and re-creation of ideas in his own terms." (ibid: 176) Just as evaluation comes later for the student, so must it appear tardily for the instructor during the creative process of teaching. If idea production is not deliberately separated from evaluation then the result will inevitably be a determination to keep those things that can and should be changed, a cynical recognition of those things that cannot be changed, and the inability to distinguish where one has gone wrong.

The final stage for creative teaching concerns the ability of the teacher to present accumulated wisdom as tentative points for discussion. Research and publications should form an integrated matrix with teaching, at any level, as a necessary condition of instruction, if only because it is the simplest way to avoid the transmission of Whitehead's "inert knowledge". A problem which has been solved by Galileo or Newton must be resolved by every student struggling to understand the laws of the universe. The creative use of understanding will be severely hampered by the incredible weight of sepulchral fait accomplis haunting the minds of academic treadmill students yearning for certification. Instead of teaching the inevitable to the impossibles we should be recreating the incredible for the inevitables. Self-discipline motivated by perfection, critiqued by introspection, and challenged by authority, applied to teaching, produces the creative teacher-scholar who views each student in the class as a potential idea producer in his/her own right.

Creativity as Product

Parnes (1963) has made a number of suggestions which can be adapted as resources for creative teaching strategies. Just as an idea can be artificially connected with a problem by means of a forced relationship, so too can a teaching method be married to course content hitherto buried in traditional nuptials. A series of associations produced by exchanging ideas about teaching with other faculty, or grappling with often turgid accounts of educational innovations elsewhere, can produce courses which are constantly changing and developing. Making notes about other teaching methods however experienced, attending departmental brainstorming sessions on teaching, and writing research papers on teaching in one's own field, will produce some beneficial effect. According to Hevitt Sanford, "creativity...seems to be in considerable part an ability to combine ideas from diverse areas of experience, and thus connect things that are ordinarily treated separately." (1968:204)

Relating the subject matter of the course to the everyday experience of the students is not only good pedagogy, it is good practice for the teacher while "living" his/her subject. If everyday faculty experience includes reading and writing the teaching of the subject then there is no reason why that experience should not be translated back into the classroom. It is often the same person who as parent arranges a highly innovative learning environment for her small child, but then drones endless verbal facts to a faceless classroom.

If it is true that the "good teacher changes men rather than transmits knowledge for its own sake," then it is also true that good creative teachers change teaching methods and materials rather than regurgitating

the profundities and absurdities of their former teachers. By combining creativity with other skills such as flexibility/individualization, asking questions, elaboration and value context, the good teacher can learn the methods which help to transmute the technician into the artist.

Appendix H

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David Majercik
Clinic to Improve
University Teaching
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CLASSROOM MANAGEMENT

CLASSROOM MANAGEMENT refers to that set of administrative behaviors which allow instruction to proceed smoothly and efficiently. Effective performance of classroom management skills requires careful advance planning and follow-through to preclude unnecessary disruption of instructional activities.

Advance planning is essential. If learning events are to occur when, where, and as appropriate, the instructor must identify desired resources, decide where each fits into the instructional sequence, and arrange to have them available. Such resources may include handouts, audio-visual materials, guest speakers, laboratory equipment, and whatever, for use within the classroom. They may also include extra-classroom things such as texts and other readings, space and equipment for research, practicum sites, etc. All of these must be identified, prepared, ordered, and made available in sufficient quantity when needed. As even the best laid plans do go awry, contingency planning is also an important classroom management skill. Should required resources not be available when needed, satisfactory alternatives must be provided in order to avoid instructional paralysis, confusion, and frustration.

The instructor who does manage classroom procedures, course readings, exams and quizzes, and term papers or assignments effectively will find that they can make an important contribution to student learning. Some considerations are:

Readings - A course will start more smoothly if required texts and other print materials are available at the bookstore or library before the course begins. Students' enthusiasm often runs higher at the outset of a course and many will try to get ahead with their reading--but only if the material is available.

Tests and quizzes - In most cases these should be announced in advance and administered on schedule. For maximum learning, tests should be scheduled to complement the logical organization of the subject. Fast feedback is the best feedback, so exams and quizzes should be corrected and returned as quickly as possible.

Term papers - This requirement should be spelled out in sufficient time and detail to permit students to accomplish the necessary consultation with the instructor and do the research and writing. Term papers should be collected, marked, and returned early enough in the course to allow students to understand where they went astray and where they were on the mark, and to make any needed revisions.

Though careful planning and systematic implementation are the chief emphases of classroom management, the instructor should be careful not to structure learning events too rigidly. Careful organization should not imply inflexibility; emphasis on procedures, at the expense of concern for student motivation or subject content, can be deleterious. Rather, careful preparation should reduce the elements of confusion, interruption, and frustration which so easily interfere with student learning.

Paul Adams
Clinic to Improve University Teaching
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Flexibility/Individualisation

Individualisation is a teaching skill which stresses the needs and abilities of the learner; it focuses attention on teaching as a process rather than a product. The learner's individual differences "refer to those mental abilities, physical characteristics, personality traits, cultural backgrounds, interests, motivations, behavioral and response mechanisms that make each person unique." (Cross & Fields 1974.) It is the willingness and skill of the instructor to use flexibility through the incorporation of these individual differences into his/her teaching strategies that produces a highly regarded performance in this category.

Advantages of Individualised Instruction

Individualization may be applied to selected elements of an instructional program, or the elements chosen may be individualised to differing degrees, or either of the above can be applied to only selected students all of the time or to all students some of the time. (Gibbons 1971). However the program is applied, the advantages should be the following: For the student -

(1) It enables him to proceed at his own pace through the study of each topic.

(2) There is a one-to-one relationship between her and the subject she is studying.

(3) It permits him to get an immediate response to his questions and answers; feedback is immediate.

(4) It should permit her to understand better the structure of the subject by looking at the entire modularised program.

(5) It enables the learner to study in greater depth those topics which that individual has never before encountered and to move with greater speed on those materials with which he is more familiar.

(6) Final ends are open ended; each student is allowed to proceed as far as time, interest, and ability will permit.

For the teacher -

(1) Freedom from the "chore" of teaching many of the routine basic skills of a subject.

(2) Greater accuracy in meeting the instructional needs of each student.

(3) Greater awareness of the progress being made by each student during the course.

(4) The necessity of developing a carefully thought-out instructional program which covers the entire structure of the course.

(5) The opportunity to humanise learning for larger student groups.

Different Approaches

Individualisation at the college level depends upon the cardinal principles of instructional goals, mastery of certain skills or concepts and continuous evaluation of individual progress being made. The resulting mix can be individualised by such methods as learning modules, programmed instruction, computer assisted instruction, private study, independent study contracts, systems analysis, or project learning. Above all, each approach enables the instructor to theoretically monitor the progress of every single student so that supportive encouragement, or preventive admonition can be supplied at any time. Rather than waiting for a student to sound the alarm, an instructor should be able to design programs which feed misunderstanding or lack of knowledge back into the main stream by means of back-up loops and revision exercises or modules.

Teaching strategies which acknowledge the individual learner, ipso facto allow individual differences to become a part of the teaching/learning interaction. As Wilson & Gaff (1973) have found out at Berkeley, personal interaction between the instructor and the students, inside or outside of class, has a positive effect on learning. Certain characteristics such as creativity, aesthetics, social sensitivity, tolerance, and the like, can be used by the instructor to create a warm classroom atmosphere. It may well seem irrelevant compared with the extreme worth of the golden nuggets of truth which are being scattered about the room by an impersonal lecturer, but if nothing else one should acknowledge the role of packaging in selling the product. More flexibly minded teachers will know that participants enter learning situations having already developed and stored unique ideas about the quality, quantity, and import of individual differences (Cross & Fields 1974). Individualised instruction enables the teacher to make use of these ideas to enrich the learning environment of the course. Before each session the teacher decides what to do (skill or competencies to be discussed); with whom (independently, small groups, large group); when (immediately, or in another scheduled time, or in the student's time); where (in the classroom, laboratory, library, learning center, or study); and how (scope of project, limitations or resources). None of these decisions need be made in a theoretical vacuum which reduces students to a lumpen proletariat.

Appendix H (Continued)

Examples of different degrees of individualization.

The following two schematic programs serve to show how instruction can be appropriately individualized without necessarily spending a lot of money on equipment. The first is content free while the second is content specific. Likewise the use of other teaching skills such as pacing, level of challenge, and learning environment are readily apparent.

Profile of Individualization of Instruction

	Highly Individualized	Moderately Individualized	Minimally Individualized
Materials used are at different levels of difficulty	All students work with materials that reflect different levels of difficulty.	Nearly half the students use materials reflecting several different levels of difficulty.	All students use the same materials.
Students work independently in intra-class groups.	Students work in small groups with little direction for prolonged periods of time.	Most students work independently in small groups for short periods of time.	Students work in small or large groups under the direction of the teacher at all times.
Intra-class groups vary in size and number to reflect student needs.	Groups range from one person to as much as half the class.	Groups vary in size, but only two or three groups are employed.	No intra-class grouping is employed.
A variety of assignments is made to individuals and small groups.	Identical assignments are given to only small groups.	Identical assignments are given to all of the class only occasionally.	All students are given identical assignments most of the time.

(Morris & Coody 1971)

This schematic form of individualised instruction contrasts with the highly operationalized practice in a particular course (Lloyd K. Bishop, 1971:103) which follows.

Students taking a comparative religion course must do: objective research, tutorial reading, lecture notation, provide data books, symposia, and functional examinations. For example, one learning unit on the religions of India includes nine segments: -

(1) Indus Valley civilization and religion.
(2) The aryan invasion and civilization.
(3) Religion of the Vedas.
(4) Religion of the Upanishads.
(5) Contemporary Hinduism and recent developments.
(6) The life and teachings of Gautama Buddha.
(7) Theravada Buddhism.
(8) Mahayana Buddhism.
(9) Tantric Buddhism.

It is taught according to the following schedule:

(1) Lectures containing the facts, data, and phenomena of the learning unit will be presented on Mondays. Students will keep notes on lecture data. Comprehensive and carefully delineated reading lists will be given to the students in printed form every Monday.

(2) In-class tutorials based on reading lists will take place every Wednesday. The instructor will clarify and supplement questions raised on the material. Students will keep a reading log containing facts and data. In-class tutorials will be extended two modules per week in the form of supplementary reading during the student's independent study time.

(3) Student data services are integral to the research performance papers and symposia. For each learning unit, seven to ten primary segments of the substantive material will be assigned to students on the basis of three to five students per segment. In researching these segments in depth, these students will also be responsible for providing the other students with their data findings when requested. These findings are available to all students in an "open book" format during the writing of performance papers as well as during the conducting of symposia.

(4) The symposia will be held once toward the conclusion of each seven-week unit. The intent here is to allow the students to perform as "experts" in an intersection of knowledge fields.

(5) The functional examinations afford the student an opportunity to bring to bear all the aspects of learning he has experienced in the seven-week unit. This examination will be conducted in "open book" format as a research performance testing for a period of six modules. These terminating experiences are called "Performance Examination As Research" (PEAR).

Conclusion

It is clear from the above examples that individualized instruction does not have to consist of learning units which leave the student all alone in a cell-like booth. It is possible that certain facts can be learned very efficiently in this way - but there are many other ways. Flexibility along with careful monitoring should raise the level of mutual respect between teacher and learner, as in a traditional dyadic tutorial situation, but this time within the context of much larger groups of students. At least the terror of term examinations can be avoided with the added benefit of a possible rise in standards and competencies rather than a diminution.

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Dan Flanagan
Clinic to Improve
University Teaching
February 1, 1975

MUTUAL RESPECT

Discussions of mutual respect overlap considerably with Carl Rogers' use of the term positive regard and L.J. Cronbach's concern with warmth. In defining warmth (1963), Cronbach delineated five general definitions: (1) an expression of feeling; (2) support and encouragement; (3) contingent social reinforcement; (4) tact and consideration; and (5) acceptance of pupil's feelings. (Educational Psychology) Although Carl Rogers is more specific in defining unconditional positive regard, both Rogers and Cronbach fail to convey an idea of strength in the student-teacher relationship that respect conveys. Hence, the term respect is chosen to convey both greater clarity and strength. Mutual respect refers to the attitude shared by both student and instructor, that each person be valued for their greatest potential contribution to the learning process.

There are two components to respect. The first is the belief in or attitude toward the other person's abilities. The second is the behavioral manifestation of that attitude in terms of valuing a student by communicating a high regard for the student's cognitive capability. Although respect relates to who and what we are as opposed to a technique, it is easier to measure, analyze and improve in behavioral terms. Thus, as it relates to teaching improvement, our considerations of respect will be limited to observed behavior. Mutual respect concerns a variety of other aspects of the learning process. In broad categories, these areas include the relationship between the student and teacher, the learning environment (including creating interest, asking and responding to questions, facilitating participation, etc.), and creativity (including exploring a variety of points of view, values and teaching techniques).

Research Findings

Respect includes a tension relationship consisting of distance and empathy between instructor and student, or valuing of other persons. "Respect for another person acknowledges him as an independent entity and as a separate and autonomous individual." (Maslow, 1970) Valuing another person as an individual means accepting their points of view and interests, "they must be regarded as having a prima facie claim for noninterference in doing what is in their interest;..." (Peters, 1966) But doing what is in one's interest is not the same as pursuing one's interest. Therefore, the distance between instructor and student must be tempered with empathy and direction on the part of the instructor. Respect involves not only the freedom of individuality, but the responsibility of direction and encouragement. Mutual

respect is not equivalent to a totally permissive learning environment, nor does it refer to an authoritarian structure. Mutual respect encourages a delicate balance between the two extremes.

David Aspy (1969) and others have found a positive relationship between the respect teachers show toward students and student cognitive gains. Using an In-Service Training Scale Aspy defines five levels on which an instructor communicates respect for the student. They include:

Level 1 - clearly negative;
Level 2 - somewhat negative;
Level 3 - consistently positive; on levels of memory and recognition, but not with creativity, problem-solving and judgment;
Level 4 - consistently positive regarding memory and recognition and occasionally on higher levels;
Level 5 - consistently communicating a positive regard on all levels.

Both with this method and the Flanders' Interaction Analysis Aspy found positive correlations between teacher respect and improved student learning. Mutual respect, then, is valuing the other person by consistently showing positive regard for her/his abilities to operate affectively on all intellectual levels. (c.f., Blooms Taxonomy)

The way in which an instructor chooses to relate to a student's intellectual abilities affects the learning environment. The most prominent change mutual respect brings to the learning environment is in interaction (i.e. student participation, interest level and the instructor's abilities as a group facilitator). The style of interaction is an indication of mutual respect. "This respect for the individual student is reflected in the learning interaction by the way in which the teacher communicates a positive behavioral expectancy ('can do') of her students and by the cognitive levels of which student responses are accepted as appropriate to the on-going process." (Aspy, 1972) Student input into the learning process and the instructor's response are two indicators of the affect mutual respect might have upon the learning environment. If an instructor communicates that she/he values students as persons (their interests and claims), the learning environment elements of <u>student participation</u> and <u>enthusiasm</u> will improve. Teaching behavior which communicates respect encourages student self-confidence. Acceptance by the instructor of the student's feelings and cognitive contributions helps the student to feel valued. Improved self-confidence increases the amount of enthusiasm a student will show for learning.

<u>The Conditions of Respect</u>

The student role in the learning process is often contingent upon

the instructor. Mutual respect does not imply unconditional self-directed learning but contingent reinforcement. An instructor's response to a student as a person communicates the value that instructor places on the student's cognitive abilities. As Aspy discovered, there is a strong positive correlation between respect and student learning and the instructor can encourage a general attitude of mutual respect within the learning environment.

Mutual respect affects creativity in terms of teaching techniques and approach to the learning process. As an instructor encourages the cognitive abilities of students, he/she also encourages a greater variety of points of view to be expressed. Such a variety implies an inevitable conflict of views; how an instructor facilitates resolution of those conflicts for each learner dictates the use of a variety of approaches to the material and/or to the teaching techniques.

Since mutual respect has been examined only on the level of behavior, respect on an attitudinal level and respect for self have been ignored. It should be noted that self respect is an important prerequisite for respect for other persons. As respect relates to teaching improvement, there are a variety of ways it can be examined behaviorally in the process of learning. To isolate the manifestations of respect as an attitude means that behavior reflecting respect can also be improved.

<u>Improving Classroom Respect</u>

Mutual respect within the learning environment can be encouraged by the instructor, hence the improvement strategies focus on possible alternatives for the instructor. Improvement strategies for mutual respect fall into four categories: (1) encouraging student individualism; (2) empathy; (3) modeling; and (4) acting <u>as if</u>.

Helping students to examine their own roles in learning relates to respect as a valuing of each person's greatest potential cognitive ability. Encouraging students to challenge points of view and examine their own values communicates the instructor's respect for their abilities. As students become more enthusiastic and actively involved with a variety of alternative opinions, values and attitudes, a mutual respect for the instructor may be evident in the student's behavior. By encouraging students to examine their roles, the student-teacher relationship, the learning environment and creativity will be affected.

Empathy refers to a student-centered approach to improvement. By examining the learning process from the student perspective

the instructor might be able to discover teaching behaviors that could improve the respect a student holds for him/her, improve their relationship, and enhance learning. The instructor could also detect behaviors which discourage student respect for him/her and develop strategies for change.

Modeling refers to exposure to the teaching behaviors of other instructors successful at creating an atmosphere of mutual respect. This can be achieved by video tapes, classroom visitations, microteaching and other laboratory methods. Modeling provides the instructor with a variety of alternative teaching behaviors appropriate for encouraging respect. From these alternatives, the instructor could then adapt the appropriate improvement strategies to his/her learning environment.

Acting as if involves a modified version of modeling behavior. To act as if mutual respect existed in the learning environment encourages improvement regardless of the attitudes of students and/or the instructor. Teaching behaviors can be modified without initially affecting the instructor's attitude, but the improvement strategy encourages behavioral changes in students. A low risk environment such as a microteaching laboratory can be helpful to the instructor in implementing the as if strategy.

Conclusion

In summary, mutual respect has been shown to have a variety of effects on learning. Respect is related to the concepts of "warmth" and "positive regard," but conveys a stronger classroom relationship between student and instructor. Mutual respect refers to the value student and teacher hold regarding the abilities of the other person. Respect has a positive effect upon the relationship between instructor and student, the learning environment and creativity. The student-teacher relationship is encouraged as each person's abilities to operate effectively on all intellectual levels is valued consistently by the other person. Within an environment of mutual respect, learning assumes a new character with a free interchange and challenge of points of view and personal values. In this way respect encourages creative new approaches to the subject matter and teaching techniques. Since respect can be monitored behaviorally, improvement strategies involving behavioral changes which encourage respect can be effective. Mutual respect between the instructor and learning provides the highest possible motivation to learning and the greatest valuing of each other's cognitive potential.

Paul Adams
Clinic to Improve
University Teaching
January 22, 1975

LEARNING ENVIRONMENT

The learning environment may be regarded as part of a four-sided matrix which helps to predict learning. The instructor forms one side of the matrix, student ability another, the learning process a third, and the environment a fourth. Each discrete teaching/learning act is specific, intentional and temporary, while the enduring, generalized context is shared between aptitude and the environment. Tabulated it looks like this:

TABLE 1*

	Specific	General
Student	Learning task A perceived change in thought, feeling, or behavior	Aptitude A predictive characteristic to measure learning ability
Context	Instructional goal A stimulus intended to bring about learning	Environment A stimulus beyond instruction that influences learning

*Adapted from Anderson and Walberg, 1974

Hence, for our purposes we may define the learning environment as any classroom activity generated by the content and method of instruction which underlies surface academic achievements. It will include Cohesiveness, Diversity, Formality, Pacing, Equipment, Goals, Organization, Competitiveness, Satisfaction, Level of challenge, Decision-making, and Group processes. Learning environment concentrates on the class as a social unit, which can be influenced by, but not dominated by, the instructor. The skill requires a sensitive and adroit maneuvering by the teacher to maximize the learning stimuli in the given conditions which originate the environment.

Importance of the Environment to Encourage Learning

Research has validated certain instruments which seek to measure the influence and predictive quality of the learning environment. In

Appendix H (Continued)

fact, such is the importance of the learning environment that a higher predictive reliability is claimed for these instruments than for standard I.Q. tests.

The learning environment inventory scales developed by Walberg, Anderson, and Heuphill rely upon self-report questionnaires requesting agreement or disagreement with the statements given. The comparatively high validity scores are achieved by including social factors along with content as the "working climate" in which learning occurs. Although this research has been carried out in schools it is reflected in the highly complex college impact studies of Pace, Stern, and Feldman. Using I.Q. alone, student outcomes can be predicted up to 16%, whereas L.E.I. scales account for between 13 and 46 per cent. (Anderson and Walberg, 1974:92) In one study, for example, (Anderson, 1970) the Cohesiveness and Difficulty scales (each containing seven items) were positively related to learning.

Similarly, Rosenshine (1971:84) reviewing the literature on teaching behaviors and learning outcomes found the following high-inference studies on teacher warmth to have consistently positive results between ratings on warmth and student achievement. "Of the 15 studies for which the trend can be determined, 12 showed consistent, positive results." (Anderson and Walberg, 1968; Heiderman, 1964; Solomon, et. al., 1963) What does all this mean for the college teacher? According to Rosenshine's studies of elementary and secondary school research "the most consistent trends were for (a) teacher use of criticism, (b) teacher use of student ideas, and (c) student or observer ratings on variables which might be considered as measures of teacher warmth." (1971:91)

Creating an Atmosphere Conducive to Student Involvement

Being aware of the class as a social group enables the teacher to manipulate group processes to help to achieve the intended learning. Creating tasks which demand cooperation in groups will encourage cohesiveness and reduce personal friction and individual apathy. Unless the students produce work in class, it is difficult for the college teacher to praise the efforts of those who cooperate for mutual benefit. The highly atomistic nature of much college level learning, expressed in personal assignments, can only receive a

personal praise or blame. Similarly, an adroit teacher requires student response in the classroom in order to weave a tapestry of student ideas which induces the desired cognitive principles. The first principle for a positive learning environment is therefore active, persistent, and enthusiastic student participation in classroom learning. (see Student Participation)

The effect of teacher warmth requires both a sense of empathy with the students and an enthusiasm for the subject which is infectious. Helping students to enjoy the subject, varying the learning modes, being friendly, fair, and open, avoiding the use of ridicule or sarcasm, and outlining possible difficulties before they occur, all show the teacher to be a supportive resource in grappling with the learning tasks. The second principle for a positive learning environment is therefore an infectious belief in the worth of the subject coupled with an inexhaustible optimism in the infinite capacity of the students to acquire the same sense of enjoyable mastery.

A third category involves the use of continual feedback mechanisms to show clearly what progress is being made by the learner and the teacher. Knowledge is "inert" when its sense of immediacy is lost by a teacher who "understands" and therefore cannot project a state of puzzlement back into the data. What becomes a challenge to the teacher or parent when confronted with a small child's halting attempts at language, so often is a judgement of the learner's stupidity when the problem is framed in calculus and projected in quotients to a stunned undergraduate. Many students new to college life have had little experience in private study, let alone the isolation of adult learning, and yet they are "stupid" if they do not catch on immediately to something which a professor has had twenty adult years to perfect. In a University of Michigan study reported by McKeachie (1967:220), those instructors who did well in terms of student achievement were described as listening attentively to students, being friendly, permissive and flexible, explaining the reasons for criticism, explaining clearly, and being skillful in observing student reactions. The habit of keeping a finger on the pulse of student retention, transfer, and understanding, is clearly much stronger if student reactions are being constantly

monitored. Likewise, retention, transfer and understanding of student problems by the teacher enables him/her to adapt accordingly. As McKeachie puts it--"Today the importance of the Ph.D. degree is as a symbol that the holder has achieved some degree of expertness in learning a scholarly field. His role in teaching should be as an expert guiding novices in developing the skills of learning his field. The professor's knowledge is a concomitant of his skill as a learner rather than the sine qua non for teaching." (1967:212) The third principle of the positive learning environment is thus the ability to "relearn" basic understandings alongside those traveling the scholastic path for the first time.

The final principle concerns what may be called emotional barriers to learning. This involves not only personal hang-ups about having to learn say math, statistics, or chemical formulae, but also the feeling of ease or unease at working in groups, alone, with peers, in front of the class; in figures, words, or pictures; in practicums, demonstrations, field exercises; scholastically, creatively, repetitively, and so on. The cellular isolation of private study for some becomes the oppressive, frustrating, autocracy of the group for others. Being sensitive to such individual differences distinguishes the professor who can work with a class rather than one who bounces instruction at a class. The final principle may be characterised as the ability to create non-threatening frameworks which allow the learner to fit his/her personal learning style into appropriate learning experiences.

An effective learning environment may be summarised according to these principles as follows:

TABLE 2

Student	Participation Learning style Emotional barriers Cooperation Adaptability Achievement	Teacher	Empathy Enthusiasm Learning expertise Clarity Encouragement Approachability
Class	Organization Cohesiveness Diversity	Satisfaction Equipment Space	Decision making Group dynamics Competitiveness

Improving the Learning Environment

A possible strategy which would help the operation and externalisation of class cohesiveness (principles 1 and 2) is borrowed from Schmuck and Schmuck (1971:111). A four sided quadrant is written on the wallboard via:

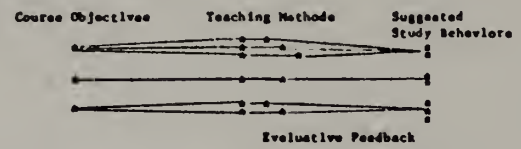
	Known to Self	Not Known to Self
Known to others	Statements which (1) show personal behaviors, i.e. "I don't answer questions"	Objective statements (3) made in small groups about each other "You um and ah a lot"
Not Known to others	Statements sharing(2) personality "I am shy" "I am afraid"	Theoretical, i.e. non-(4) observable assumptions about the class

All students are asked to complete quadrants 1 and 2 by writing in what they think is relevant information to the class. Then in small groups, each student writes information about other members of the group--this information later being pooled between groups. The fourth quadrant can be used at college level by placing statements which may have no observable behaviors but which students feel are characteristic of the entire class. The resultant pool of information should create the nexus of a discussion which can open up the class members to one another thereby fostering a greater sense of cohesiveness. The college teachers can of course add in their own assessments.

The continual feedback process of principle three can be monitored in a number of ways. Regular no fault quizzes, questions and answers between students in pairs, questioning in class, buzz sessions, etc. Essentially though, it requires the adoption of a teaching style which regards teaching as a process because knowledge is viewed as process, and not product. Both for this principle and the fourth one of personal learning styles, the following method could be attempted.

The objectives of the course should be listed and grouped under different instructional methods, before the course is begun. Then as the different objectives are being discussed some advice as to which study procedures are recommended, should be included.

Study behaviors which are appropriate to the material taught will also help to break down the "natural" tendency to rote-learn because that is in reality the "natural" expectation of the teacher, in spite of the high-flown language of the course objectives. Finally, several major objectives can be taught and re-taught by a series of discrete teaching methods which evaluate the progress made at the end of each section. We can summarize this in the following chart:



The fact that this strategy forces into the open a hypothesised fit between teaching methods and learning skills, coupled with careful evaluation, will eventually produce the kind of forum which is conducive for the generation of an exciting and challenging learning environment.

Finally, the adult use of various teaching styles, as opposed to methods, can have the effect of changing the learning environment. Axelrod (1970:43) lists five college level teaching styles as 1) The Drillmaster; 2) The Content-Centered Faculty Member; 3) The Instructor-Centered Faculty Member; 4) The Intellect-Centered Faculty Member; 5) The Person-Centered Faculty Member. The first two are subject-matter centered instructors, the last two are student-centered instructors. The third is somewhere in between, she/he acts as a model of interpretation of the subject. Number 3 differs from 1 and 2 by seeing knowledge as process and not as product, but 3 still determines what is to be studied and how. Numbers 4 and 5 see knowledge as process but allow much greater input from the students so that the students shape their own learning programs. Typically, 1 - 3 accuse 4 and 5 of lowering standards, while 4 and 5 see 1 - 3 as teaching students to rote-learn rather than to think for themselves.

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Appendix H (Continued)

Chris Doggett
Clinic to Improve University Teaching
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ENTHUSIASM/INSPIRATION

Enthusiasm/inspiration is a label for a number of skills of teaching that tend to inspire students and to generate enthusiasm among them. Basically, enthusiasm/inspiration deals with the instructor's abilities to conduct and direct learning activities in a dynamic manner and to stimulate interest and excitement in course content and activities. A distinction must be made here between an instructor generating enthusiasm and being enthusiastic. One does not have to be necessarily enthusiastic in order to generate enthusiasm. A well-timed movie, outside speaker, simulation, or other form of stimulus variation can serve to generate enthusiasm and to inspire students.

Aside from stimulus variation, there is another thing the teacher can do to enthuse and inspire students. The focus here is on the conveyance to students by the teacher of the importance to him or her of the subject matter and the discipline of which it is a part. If students perceive the teacher to have strong convictions about and a great interest in the subject matter, that teacher is often thought to be dynamic and inspirational. Included here is not just the way the teacher talks of his or her interest, but it includes his or her whole personal demeanor. An example may be the best way to describe this.

A teacher at a state university always gets a large enrollment in each of his classes. His style of teaching is to lecture by reading his notes in a relatively monotonic voice throughout the class period. He rarely moves from the lecture and students ask relatively few questions. However, he is considered by students to be one of the best teachers on campus. He always comes to class in a suit and tie, and his lectures are correct, well-organized, and clearly thought out. He gives the impression of attaching great importance to his teaching and of being highly interested in the discipline. He even walks with an air of authority. All in all, he is able to inspire many students in the class.

This is not to say that a teacher should do all of the same things in the classroom that this teacher does. The point is that in whatever way appropriate for an individual, an attempt should be made to give students a sense of the importance to the teacher of the subject matter. This type of dynamism is very catching to students and often results in more interesting, exciting and inspirational classes.

Thus, there are ways to generate enthusiasm without being enthusiastic. One who teaches in a dynamic manner is often thought to be vivacious, active, constantly in motion, full of energy, and having a certain appeal, or charisma, about him or her. While this is often true, there may be little that can be done to "train" someone to develop these characteristics. However, if one is

not particularly dynamic or vivacious, he or she can compensate for that by developing some of the trainable skills mentioned above.

However difficult to define teacher enthusiasm/inspiration may be, a substantial number of studies have indicated its strong relationship to student achievement and to student reactions toward their instructors and courses (Rosenshine, 1970; Hildebrand, Wilson, and Dienst, 1971). Thus the desirability of developing these, or compensating, skills seems clear.

Paul Adams
Clinic to Improve
University Teaching
January 17, 1975

PERSPECTIVE

The skill here called perspective refers to the wider context in which a subject is taught. This context may be substantive, interpersonal, or sociological. It is the teaching equivalent of the learner's imperative to integrate the fragmented ontological clippings of course work into a workable synthesis. Perspective is therefore defined as the integration and description of various viewpoints inside and outside the discipline both in relation to the total body of knowledge and the real world.

Developmental theory

Various writers such as Bruner and Piaget have discussed cognitive development in a general sense. However, there is a growing literature which is concerned with the cognitive development of college level students and student sub-cultures. Sanford (1969:10) bases his statement "It is curious how unprepared for life the graduates of our colleges are" on the maxim that "the time has come for us to control our zeal for imparting knowledge and skills, and to concentrate our efforts on developing the individual student." (P. 8) Similarly Erik Erikson (1959; 1963) postulates that at each phase in the life cycle, there are "phase specific developmental tasks." (1963:250)[1]

The schemata outlined by Perry (1970) working with Harvard students outlines the following stages: (1) Dualistic absolutism; (2) Generalised relativism; (3) Personal commitment. Each stage "progresses" into the next but allows for deflections which are termed temporising, retreat, and escape. Most instructors allow for the transition from absolutism to relativism, but commitment is less well understood particularly if it involves allegiance which is quite contrary to the values of the professor concerned. Perspective is the skill which more than any other allows for these cognitive developments.

[1]For a complete bibliography see (Brawer 1973:2)). Also Yamamoto, K. (ed.) The College Student and His Culture: An Analysis. 1968.

Internal integration

The academic privilege of teaching courses which owe allegiance only to departmental considerations can be offset in the classroom through the open-ended discussion of various approaches to a particular problem. For example, the term "structure" can have morphological, organic, semantic, generative, or epistemological referents, and yet the assumption of disciplinary discreteness often dictates a one-sided usage which may not be acceptable to more eclectic students. Inside one discipline "social structure" may refer to social morphology, a statistical universe, a symbolic system, or a theoretical model, but great care is here taken to distinguish which school is meant. There is far less concern for usage of the same words in other disciplines.

A challenging question by a student trained to think in terms of cell structures may be dismissed as irrelevant, outside the realm of inquiry, or beyond the scope of the instructor. The student cannot afford such a luxury even if the instructor can. Responding to student questions carries a double load for the instructor; answering in terms the student can appreciate and stimulating further questions. Finding the right approach in order to encourage challenging questions is the bench mark of the perspective teaching skill.

According to Bohemian et. al, 1974, the teacher in the classroom should approach the students in the same way a researcher approaches the study of a foreign cultural group. Whatever the people do or say is raw data to be sorted out by the researcher. "When the learning alliance goes wrong, the teacher should ask which of her sub-goals is interfering with the goals of the student." (1974:96) If what the students do is regarded as raw data then clearly the onus is upon the teacher to make sense of it - not the other way around. Suppose the professor passes judgement on a definition by a student as being "outside the scope of the subject" then she/he is limiting the input of raw data which might have amounted to a richer classroom learning experience. Similarly, it is very hard to stimulate challenging questions if the learners are constantly having to reorient themselves to the teacher within

his/her own narrow context.

Putting things in the right perspective thus requires an openness to a variety of points of view, an explanation of the possible appropriateness or relevance of the subject matter, and an ability to accept challenges to received wisdom. The skill entails walking the tightrope between synopsis and hypostasis.

Some possible strategies

(i) Discussing personal research

The pertinence of research is nowhere more clearly demonstrated than when research experiences can be used to illustrate a basic point, viz:

> "I faced this same problem when trying to describe the behavior of liquids at very low temperatures."

The problem was the ability of water to flow uphill under observable circumstances.

(ii) Relating the problem to other disciplines

A consectional flow model can be used to describe the geophysical process of continental drift, even though the context may be ecological, or even the behavior of the stock market. Bridging two or more contexts of meaning calls attention to certain sets of associations which in turn portray forms of symbolic relatedness (Duncan 1968:133) and so on.

(iii) Inviting challenging responses

An obvious technique here is the "deliberate mistake" introduced during a lesson to see if students pick it up. This somewhat artificial method can be broadened to include the attempt to establish " a mistake" even though none was intended. That is, a student challenges a statement on the basis that according to another context the statement would not hold up. The instructor can then resynthesise the discussion to include other possible meanings than the one originally offered.

(iv) Inviting students to place a problem into their own experience

A problem is given renewed understanding when it is centered within a real context which has been experienced by everyone. Such experiences can be shared. When discussing the topic of relevance it is important to stress the timelessness of a problem

as well as its timeliness (Drucnic 1967:255). The fact that there is nothing new under the sun need not go any further than the pharaonic hieroglyph which stated "The world is going to pieces, children no longer obey their parents, and everybody wants to write a book." According to the Carnegie Commission relevance means "Courses that relate directly to actual personal interests of students and to current societal problems." (1972:45), but it goes on to say that "Basic material, properly presented, is the most relevant of all." (ibid:46)

(v) Agreeing to disagree

It is sometimes necessary to leave a discussion open-ended in order to cover the required material. All teachers have encountered students whose main concern seems to be to score points rather than expand the context of the discussion. Nevertheless it is surely preferable to try to channel such contributions into a positive learning experience rather than to squash the diehard rebel into a non-negotiable position. Such promptings as "can someone else explain what Joe is saying" or "what you seem to be saying is..." or "I would like to continue the discussion in the form of personal assignments, but for now..," may suffice.

Perspective is clearly closely related to other skills such as creativity, flexibility, and elaboration. It faces the instructor with a clear choice - whether to try to understand where the students are, before outlining the learning tasks, or whether to hide behind the worthiness of his/her subject and expect the students to do all the synthesising and synopses that are required to obtain the utmost from a full time adult learning experience. As Drucnic puts it "The college freshman has left behind him a society basically hostile to the unbridled pursuit of knowledge, and the senior will soon re-enter that hostile environment. The academic community has four short years to induct him as a member." (1967:255)

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Bette Erickson
Chris Doggett
Clinic to Improve
University Teaching
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VALUE CONTEXT

Much of what occurs in teaching and learning involves value decisions--the process of choosing among alternatives on the basis of their perceived merit, worthiness, or importance. Value context refers to the instructional situation which is created in the process of making such value decisions and dealing with their implications and consequences.

Instructors are instrumental in establishing the value context in which teaching and learning occur, and they may contribute to the definition, clarification, and elaboration of value context in a number of ways. The value context is partially defined by the instructors' personal values as these affect the educational decisions which they make. Other value contexts may be clarified as the instructor asks students to recognize the value decisions which others have made and to examine their implications and consequences. Finally, the value context may be elaborated and expanded as the instructor attempts to help students clarify their own values and explore the implications which these values have for their present and future conduct.

INSTRUCTOR'S PERSONAL VALUES

To a great extent the value context is defined by the instructor's personal values as these are reflected in his or her professional conduct, in interactions with students, and in course planning and instruction. In carrying out the various responsibilities defined by their professional roles, professors necessarily set priorities which reflect their value decisions. There are always books to be read, grants to be sought, research to be conducted, articles and books to be written, services to be offered, meetings to be attended, and students to be taught. The amount of time and energy which instructors commit to their teaching reflects, at least in part, their beliefs about the importance of this aspect of their professional role, and this decision has important consequences for students.

First, it may affect the quality of instruction which students receive. Instructors who believe teaching to be an important part of their professional role are more likely to spend time and energy in planning learning experiences and in continuous efforts to improve their teaching performance.

In scheduling office hours and appointments with individual students, instructors further prioritize their professional responsibilities. The amount of time instructors are willing to spend with students outside of class says something about where students are in this list of priorities. Moreover, instructors often find it necessary to

COURSE PLANNING

Value decisions are made at all stages of course planning and instruction. The mere act of offering a course at all reflects judgments about what an instructor, a department, and the university believe important in the education of students. The decision to make a course a requirement or an elective for students communicates further information regarding what departments or programs consider essential or important in the preparation of students.

Instructors make value decisions as they define the scope of their courses. In determining the topics to be included in their course and the amount of time to be spent on those topics, instructors make decisions partially based upon their judgments about what is essential, important and relevant. In formulating course goals and learning objectives, instructors further define what knowledge, skills and attitudes they believe are important for students to acquire and develop. In selecting instructional materials and activities, instructors make value decisions regarding the nature and amount of information to which students should have access and the point(s) of view to which they should be exposed. Classroom activities and outside assignments partially reflect the instructor's judgments about how instructional time may best be spent.

Instructors' personal values also affect their evaluation procedures. The questions which are asked on examinations or assignments and the criteria which are selected for evaluating students' responses reflect what the instructor believes is most important and essential. Similarly, the standards which are set for grading students' work portray the instructor's values about what is unacceptable, acceptable, or exceptional.

Thus, instructors' personal values as they are reflected in their professional conduct, in their interactions with students, and in their decisions about course content and instructional procedures contribute to defining the value context within which instruction occurs. Since an instructor's value decisions may have important consequences for students, it is important that instructors recognize the value decisions which they are making and carefully consider their implications.

arrive late for scheduled meetings with students, to cancel or reschedule some appointments, or to miss appointments without prior notice to students. While such behaviors often cannot be avoided, they nonetheless reflect the instructor's setting of priorities which, in turn, reflect their values.

Furthermore, the importance which instructors attach to teaching may affect the value attached to teaching by students--many of whom may be preparing for careers which include teaching. If students see that their instructors regard teaching as a relatively unimportant professional responsibility, and if students are not encouraged to develop their own teaching skills, they are not likely to spend much time or energy preparing themselves to be teachers, nor are they likely to regard teaching as important once they become teachers.

INTERACTIONS WITH STUDENTS

Instructors' personal values influence the ways in which they interact with students, both in and out of class. The respect which instructors hold for students in a group and as individuals affects their interactions. Whether or not the instructor solicits students' reactions to instructional methods. Responses to those reactions by continuing, adapting or modifying instructional practices reflects the value or importance which instructors attach to students' perceptions, opinions, feelings, and preferences. Similarly, the instructor's personal values may determine which ideas, concerns or projects receive attention and encouragement and which are discouraged directly, or indirectly by being ignored. Finally, the instructor's values often determine which students receive the instructor's personal attention and time and which students receive only cursory attention or are dismissed.

Making Values Explicit

What the teaching skill of value content seeks to achieve is the overt exploration of much which is normally covertly assumed in human relationships. In this case the focus is upon the teaching/learning context, the "why" of teaching as opposed to the "how." Such questions vitally concern the teaching of any subject, including the hard sciences. All subjects are taught within a university context; no scientific fact, no matter how objective, is ever value-free so long as it is used within the context of social interaction. No professor can assume objectivity in his/her personal life whatever the assumptions of the subject they profess. Insofar as their personal lives touch the university (colleagues or students), there is the legitimate realm of value content. It is the honest exploration of these values which constitutes the very kernel of a liberal-arts education, and yet so often the content is "out there" and never "in here" where instruction is taking place. There does not seem to be any bona fide reason why this should be so.

EXPLORING THE VALUE CONTEXT

Since decisions about course content and instructional procedures are affected by values, instructors' personal values to some extent define the value context which is established. Furthermore, to the extent that value issues and decisions appear in the course materials and resources, these instructional materials serve to establish the value context. Whether or not students are consciously aware of the role which values play is often dependent upon the instructor's efforts to help students identify such value issues and decisions and examine their implications. In some situations it may be important that students be highly aware of value issues and decisions.

For example, value decisions often affect what students learn, and shape the ways in which they think about what they are learning. In defining their courses, instructors include certain topics, objectives, materials, and instructional procedures and exclude others. To some degree this selection process determines the information, ideas, points of view, etc. to which students are exposed (or not exposed) and shapes the ways in which students understand and interpret the subject matter. Thus, it would seem important that students be aware of the bases for such decisions. To the extent that values have influenced these decisions, it is helpful for students to recognize these values and be aware of their implications and consequences.

While questions involving value decisions arise in some subjects and courses more than in others, it is always useful to help students to recognize such questions when they do arise. In some situations, students' understanding of problems or issues which they confront requires not only that they be familiar with various interpretations of the problems or issues, but also that they recognize the values which have contributed to the definition or interpretation of a situation. Indeed, it's sometimes the case that a situation becomes a problem or issue solely because there are conflicts in values or interests. Moreover, choosing among alternative solutions or courses of action requires that value decisions be made. Many solutions appear viable if considered solely on the basis of rational thought, but closer examination may reveal that some must be dismissed because, though rational, they conflict with values, and others are preferred because they are consistent with values. Thus, if students are to understand the complexities and subtleties of the problems and issues which they confront, and if they are to evaluate alternative solutions and courses of action, they must be aware of the value issues involved.

HELPING STUDENTS TO CLARIFY THEIR OWN VALUES

In much the same way that students define and redefine their opinions and positions as they are introduced to new ideas, issues, and problems in a course, students also define and redefine their <u>own</u> values as they explore the subject matter. While instructors usually devote considerable attention to encouraging and guiding students' efforts to articulate, test, and evaluate their (the teachers') opinions and positions, often less attention is given to helping students identify their own values, examine their implications, and adjust or modify their value systems in light of new insights or greater understanding. (For suggestions about an instructional methodology for values clarification, as well as specific classroom activities, we suggest Sid Simon, <u>Values in Teaching</u>.)

SUMMARY

Because value context has vital educational consequences, it is important that instructors recognize the value decisions which they are making and carefully consider the consequences which these have for students. Secondly, to the extent that value issues and decisions affect students' understanding and interpretation of the subject matter, effective performance in establishing a value context requires that instructors help students recognize such value issues and decisions and explore their implications. Finally, since students' own values affect their present and future thought and action, it may be important for instructors to explore ways in which they may help students clarify their own values and reflect upon their implications.

Annual Report 1972-1973 to the W. K. Kellogg Foundation

The Clinic to Improve University Teaching
School of Education
University of Massachusetts

Michael A. Melnik
Director

Dwight Allen
Principal Investigator

Contents

Section 1

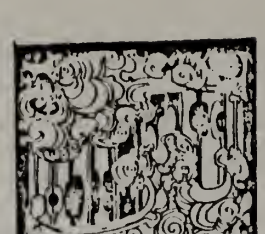
Introduction

This report briefly examines the background of the Clinic to Improve University teaching and details its development from September 1, 1972, through September 1, 1973, the first year of full operation under a three-year grant from the Kellogg Foundation. It also describes the current status of the Clinic process.

In addition to this introduction, which comprises Section I, the report includes four major sections. Section II summarizes the conceptual and initial development of a teaching improvement model at the University of Massachusetts. Section III discusses first year programmatic activities, including on- and off-campus components, and explains the details of the diagnostic and improvement process. Section IV overviews future project development, and places these activities in the context of second year plans. Finally, conclusions are drawn about the major strengths and weaknesses demonstrated during the Clinic's first year.

Readers who are relatively unfamiliar with this program and wish an introduction to its history and current operation are referred particularly to Section II and the "Description of the Current Clinic Process" portion of Section III. Those who wish specific information on first-year activities should focus on Section III in its entirety. Any individual or institution wishing further theoretical or practical information on this model is invited to contact Dr. Michael Meloik, Director of the Clinic to Improve University Teaching, at the University of Massachusetts, Amherst, Massachusetts 01002, (413) 545-2820.

Section 2

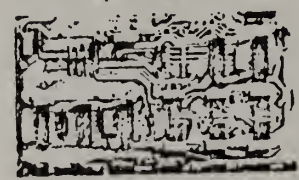


The Clinic to Improve University Teaching: Its Rationale and Early Development

College teachers today are expected to be experts simultaneously in all areas of instruction within their disciplines. Most college teachers, however, have had little or no formal instruction in the educational process. Institutions of higher education simply do not consider teaching to be a prestigious part of their programs, or else they assume that teaching is a "natural" ability which does not depend upon specific training. Whether graduate students and or graduate faculty members share this pejorative view (or, have in fact been the causative agents) is unclear. Yet the fact remains that these attitudes exist.

A more careful study of the current situation of colleges in regard to the question of effective teaching has provided the paradigm for the development of the Clinic to Improve University Teaching.

Colleges and higher educational institutions have long believed that the most effective preparation for teaching is scholarship. In other words, they have confused the development of subject matter competency with the development of "good" teaching. After all, it is argued that the most effective way to prepare one to be a teacher is to, in fact, develop the cognitive aspects in one's area. Therefore, to prepare teachers at the expense of developing scholarship is viewed as non-professional.



The reward system is another inhibitor in the process of developing teaching proficiency. Currently, within departments, the reward system favors research at the expense of teaching competency. Graduate work has been heavily influenced by the requirement of specialized scholarly study, either for the securement of funding or for the prestige of particular departments. Under the influence of this reward system, faculty members have understandably given teaching a lower priority and opted for research efforts to enhance careers as well as knowledge.

The problems of "publish or perish" have been an inhibiting factor within higher educational institutions for the development of effective college teaching. It is obvious that the reward system is slanted in favor of research and publication at the expense of instruction. Faculty loyalties are oriented to their national or international community of scholars, not to the institution and students they are engaged to serve. The same system often encourages graduate students to develop mastery of their discipline at the expense of becoming professional teachers. They are told implicitly, through the actions of their college professors and their departmental administrators, that they must develop their competency in the area of research and the pursuit of knowledge.

The Clinic to Improve University Teaching was developed to specifically address itself to the needs of graduate students and faculty members as teachers. The college setting today clearly does not offer alternatives for individuals who wish to develop this ability. The system of higher education has been built at the expense of respect for the worthiness of teaching. The Clinic and its teaching improvement process, on the other hand, was developed on the belief that teaching competence should be an integral part of the faculty's professional development.

The process itself was formulated in 1971 by Dr. Michael Melnik, then a graduate student at the University of Massachusetts' School of Education, and Dr. Dwight W. Allen, Dean of that School. The Clinic's teaching improvement process can best be described as the identification of teaching strengths and weaknesses through a systematic diagnostic procedure and the application of appropriate teaching improvement strategies with the continuing support and assistance of teaching improvement specialists.

Teaching diagnosis has always been hampered by the simultaneous interaction of multiple factors. In fact, some theories of teaching have been developed to reflect this reality. Some conclude that the complexity is so necessarily interdependent that the process of diagnosis is impossible and inappropriate. Dr. Melnik's work began with an effort to develop strategies of diagnosis which were specific but not simplistic. He deemed it necessary to avoid the temptation of delaying practical work because the existing theoretical base was so shaky.

Students were chosen as a primary source of information for the localization of teaching strengths and weaknesses. Other data collection sources explored and experimented with included such activities as class visitations, videotaping and interviews. These external sources of teaching data were then analyzed by a trained diagnostician, who facilitated the diagnosis process.

Teaching improvement strategies refer to the solutions of problems which have been previously identified through the diagnostic procedure. If the concept of a clinic was to be valid, it was necessary not only for there to be an accurate and efficient diagnosis, but it was extremely critical that there be a follow-up teaching improvement process to deal with the localized difficulties. It was decided that a program with a list of teaching improvement alternatives was of paramount importance for the overall success of the Clinic.

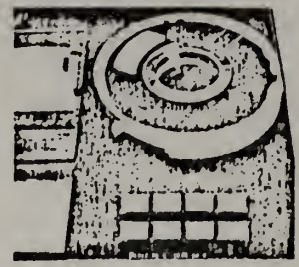
Teaching improvement became a co-operative activity between the teacher and a professional diagnostician. This sharing of responsibility is an effort to involve the teacher (with professional help) in the resolution of his own teaching difficulties.

The instructor is thereby offered the opportunity to select one or several improvement strategies which he and the diagnostician feel are most appropriate.

All of the areas of the Clinic — the aspects of localization, technical skills of teaching, teaching analysis by students, and teaching improvement strategies — were initially grouped together in an experimental manner to formulate a Clinic process. Yet the Clinic itself was not formulated, nor would it be, until the individual components of the process were developed to a point where they would be combined reasonably to offer services which the Clinic planned to offer.

During a two-month period, from September to the end of October of 1971, the individual parts of the Clinic were developed. This testing and retesting of materials and ideas was possible only with the help of many individuals who offered their time and efforts in the conceptualization and actual material development of the necessary components of the Clinic.

The culmination of all efforts was the development of a working Clinic which was first implemented with the Department of Computer Science at the University at Amherst.



Section 3

First-Year Developmental Activities

The original proposal to the Kellogg Foundation called for an initial three-year phase in the implementation of a Clinic to Improve University Teaching, as well as an additional three-year developmental phase if the first three years proved successful. The first year, September 1972 through September 1973, had as its primary objective the institution of the Clinic as a full-scale operation. This included conceptual extension of the model's diagnostic and improvement components, the refinement of all support instrumentation and procedures, and research in the area of teaching and learning skills. During this time the program was scheduled to be operational at the University of Massachusetts in order to provide initial services to faculty members and to create a laboratory situation for theoretical and technical formative work. The external applicability of the system was to be tested through liaisons with other institutions. Finally, new and relatively unexplored aspects of the model (such as skills of studenting and in-service innovation) were to be pursued. This section examines the year's progress at the University of Massachusetts itself, the resulting Clinic process, ancillary instructional services to the University, and the model's use in other institutional contexts.

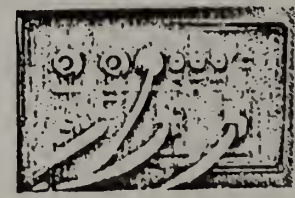
Development of the Teaching Improvement Model at the University of Massachusetts

During the first year, significant progress was made in the development of Clinic to Improve University Teaching services offered to University of Massachusetts faculty and students. Approximately one hundred instructors participated in some phase of the teaching improvement process since it was first articulated in 1971. Eighty of these were involved during the 1972-73 academic year itself. They represented over twenty different departments and taught more than one thousand students. The program in which they participated had a more sophisticated data gathering system and more competent diagnosticians than existed at the beginning of the year. Furthermore, it had broadened its focus to include new teaching skills and corollary foci. Most notable was the strengthening of the multiple teaching improvement strategy packages outlined in 1972 but not systematically implemented until the summer of 1973. The year 1972-73 was a critical, formative and successful period for the Clinic to Improve University Teaching.

In order to examine in more detail the first-year development of the program, it is necessary to review its status prior to September 1972. Work was begun on the teaching improvement model by Dr. Michael Melnik in 1971. As its background and general scope are discussed earlier in this report, suffice it here to note that by early 1972 the basic model had been articulated. It centered on a client (the University faculty member) and a diagnostician (a trained graduate student) who would work together, using specified data collection mechanisms in an analysis of the client's teaching characteristics and an identification of his/her teaching strengths and weaknesses, eventually developing a set of improvement strategies to meet the needs suggested during this sequence.

In the process of conceptualizing and formulating this model, Dr. Melnik worked with approximately twenty University faculty members. Most of them were members of the Computer Science and English Departments, whose respective chairmen, Dr. Michael Arbib and Dr. Joseph Frank, were constructive friends of the project from its inception. Out of this work evolved a more detailed statement of the Clinic process through the localization stage. A workable instrument for data collection was developed and diagnostic procedures were refined. Those clients who completed the process received special help in identifying their own strengths and weaknesses, but less help with improvement.

As the project moved into its first operational semester as a Clinic to Improve University Teaching, Fall 1972, several basic needs were apparent. The data collection and diagnostic instruments required further revision. The role of diagnostician itself demanded further clarification, since graduate students would have to be trained as diagnosticians. Finally, the improvement of teaching skills and behaviors needed attention. The basic strategy for achieving these objectives was to implement an operational program which could serve instructors while the model itself was being modified.



During this semester two dozen faculty members participated in the Clinic's teaching improvement process. Half of these were members of the Chemistry Department recruited and served by one diagnostician. The remaining instructors came from a variety of disciplinary backgrounds and included representatives from Smith and Amherst Colleges. All participants were told that at such an early stage in the program the primary outcome of their participation would be to assist the Clinic itself, and that they should not expect sophisticated support in the immediate future. In other words, these faculty members volunteered as experimental subjects who could anticipate some professional gain from the experience.

At this point there were four primary mechanisms for data collection: class visitations, videotape, personal interviews, and paper and pencil instruments. Of these the fourth was the most unusual and, therefore, warranted the most attention. Its distinctiveness stemmed from the fact that the instrument was an analysis of teaching by students which used the client's own class as a primary feedback source. One of the major objectives of the semester was thus the elaboration of this instrument, ultimately labelled TABS (Teaching Analysis by Students). In his early work, Dr. Melnik

had used an eighty-item questionnaire which included the definition of specific skills. Responses were made on a nine-point bipolar scale. By December of 1972 a modified instrument had been designed reducing both the number of skills on which it focused, as well as the total number of items. Furthermore, responses were made on a four-point scale (plus a "not applicable" category). In other words, an assumption of a greater student understanding about teaching skills was made and the learners' analytical role was changed from closely rating a professor to making general decisions about where improvement was perceived to be required.

In addition to the data collection instruments, attention was also paid to the diagnostic feedback mechanisms. For example, the computer printouts used by diagnosticians in consultation with their clients were improved. Information on means and standard deviations was replaced by simple frequency distributions for each questionnaire item buttressed by histograms which recapitulated the information in graphic form.

The final area of emphasis was on the role of diagnosticians. During this semester staff members operated primarily as observers, without significant long-term interaction with their client. While Clinic procedures were being revised, diagnosticians were gaining confidence and skill in areas ranging from localization of teaching problems to interpersonal behavior. By the end of the Fall semester, they were ready to take a more active role in the improvement process itself.

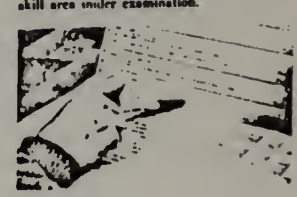
The next steps in the development of the Clinic process were taken during the Spring 1973 semester. Project personnel had generally adopted a conscious strategy of avoiding large scale publicity for the Clinic during its first year of operation in order to facilitate development and reduce potentially excessive demands on staff time. By January of 1973, however, work had progressed far enough to allow the systematic recruitment of clients. Approximately forty individuals from the University of Massachusetts instructional staff were accepted, ranging from graduate teaching assistants through full professors. As always, a wide variety of departments were represented, including Rhetoric, English, Anthropology, Political Science, Computer Science, and Law. The twin goals of service to clients and project development were again set. By now, however, the service component had expanded to realistic proportions.

This period saw further revision in programs software and hardware. By the middle of the semester the data collection instruments (including the TABS) and the diagnostic procedures had been refined for more effective use. A sociological insert instrument was developed to gather background information on students (class, grade point average, age, etc.) for eventual correlation with other data. This was ultimately incorporated into the TABS itself. A systematic application of diagnostic procedures was, therefore, a possibility.

During the latter part of the semester the project focus shifted to improvement. Having isolated teaching difficulties, how could the staff consistently aid instructors in improving their professional performance? This endeavor had mixed success. Its primary outcome was individualized improvement strategies created *ad hominem* by diagnosticians for their clients. The two most frequently used mechanisms were microteaching and personal consultations. In addition, a formal feedback loop was initiated in the Clinic process to give ongoing performance information to clients and to allow for regular client suggestions.

What did not happen during the Spring was the creation of a wide range of improvement strategies. All clients received excellent help with localization plus the services of a trained diagnostician as a face to face counselor. Most clients received some benefit from the microteaching approach to improvement. Beyond this, however, the success of the program varied from instructor to instructor. Out of this situation was born the idea of a summer institute whose goals were to be the development of a broad package of teaching improvement strategies usable in many different instructional and personal contexts.

Such an institute was initiated during the Summer semester of 1973. It was extremely successful, and greatly strengthened the Clinic. Participating were eighteen faculty members from fifteen departments at the University of Massachusetts, as well as one additional representative from still another department who was a special summer client. Members enrolled from other institutions ranged from the Monterrey Institute of Technology, in Mexico, to the City College of New York, from Barber Scotia College in North Carolina, to the YMCA College of Chicago. During this time one hundred additional improvement strategies were developed and organized as a package that could serve as the basis for work during the second project year. To the technical skills of teaching were added other teaching skills, primarily affective (for example, interpersonal relations), as well as skills of studenting and skills of advising. Finally, preliminary work on one additional form of instrumentation was begun; the S-TABS (Specif.: Teaching Analysis by Students). Each S-TABS focuses on one particular skill area and draws from a large item pool to create an instrument which can bring into sharper focus strengths and difficulties first identified by the TABS itself. This tool is useful both in the diagnostic process, where it provides the diagnostician and client with more detailed information, as well as suggesting improvement strategies, and in the realm of long-term monitoring, where repeated applications of a given S-TABS provide data on improvement (or the lack of it) in a skill area under examination.



The improvement strategies developed during this period were based on the extension of existing strategies, the professional input of the staff, and client suggestions. Indeed, each participant in the Summer program was paid a nominal stipend by the University itself on the condition that he or she remain open to experimentation and assist in the development of new techniques which would be particularly applicable to colleagues within the same discipline. Since these people ranged in rank from lecturer to full professor and in experience from the relative newcomer to the twenty-year veteran, the richness of input was assured.

All of the techniques thereby developed can be categorized on two dimensions. First, some take place inside the classroom and others occur outside the classroom. An example of an in-class strategy is the "no-fault quiz." A student is given a quiz without penalty for failure to see if he or she has mastered requisite material. The examination is then corrected in class, enabling the instructor to identify areas needing review, to select appropriate supplementary resources, and to adjust the pacing of lessons. These quizzes can be repeated regularly to monitor progress in learning. A sample strategy for use outside of the classroom is the educational specialist approach. An individual already known and respected by the instructor offers suggestions about more effective teaching.

The second dimension is intervention strategies versus monitoring strategies. Microteaching would be an obvious example of an intervention strategy, one which has proved particularly valuable to the Clinic. The use of a tape recorder exemplifies the monitoring strategy. Here the instructor identifies one or two students whose comments about a particular teaching behavior he or she would value. These learners are given small tape recorders into which they make "spontaneous" observations during

the class concerning that skill. The diagnostician and client then review the results to gain new insight about the particular issue under consideration. When used over time, this type of strategy is an effective way of monitoring improvement.

By the end of the summer, a workable set of instruments and procedures had been balanced by newfound competence in the realm of systematic improvement. Future developmental steps will consist of extending these procedures to the secondary and elementary levels, adding further seminal skills to the current package of twenty, and continually providing service to all clients on the University of Massachusetts faculty who wish to avail themselves of it.

The Clinic Process as Currently Defined

In light of this development, it would seem useful to overview briefly the current status of the Clinic to improve University Teaching improvement process. The process involves two individuals, a diagnostician and a client, supported by ancillary staff and resources. It is divided into two basic stages: localization (including data collection) and improvement.

The Clinic process begins with an interview during which the diagnostician helps to identify and clarify the instructor's objectives vis-a-vis both his course and his work with the Clinic. Once objectives are clear, the process of collecting data related to the instructor's teaching behaviors is initiated. Data sources include: classroom observation, videotapes, audiotapes, interviews with teachers, interviews with students, classroom discussions with and without videotapes, student questionnaires, instructor self ratings and predictions of student ratings, and copies of course objectives, assignments, bibliographies, and tests.

Of these data sources, the student questionnaires developed by the Clinic are particularly important. The Teaching Analysis by Students (TABS) described in the previous section is composed of items derived from the definitions of twenty teaching skills and behaviors extracted from the microteaching literature[1], the work of Hildebrand, Wilson and Dienst[2] and the teaching experience of the Clinic staff. For each item, students are asked to decide whether their instructor's performance is satisfactory or in need of improvement. The results generally indicate which of the instructor's teaching skills and behaviors are considered unsatisfactory by students. More precise information about the roots of student dissatisfaction comes from the results of Specific Teaching Analysis by students (S-TABS) which are compiled from a large selection of items relating to each of the teaching skills and behaviors. These instruments are created by the diagnosticians on the basis of TABS results, classroom observations, and client interest.

After the results of the student questionnaires are analyzed by computer, the diagnostician synthesizes and summarizes the computer printouts and the other data for presentation to the instructor. The results of the student analysis are then compared to the instructor's predictions as a means of assessing the instructor's awareness of his/her students. This facilitates a teacher self-confrontation process which can occur through two stages: first the teacher may review and consider the data by himself, or the teacher and the diagnostician may decide to evaluate together the data and the instructor's reactions to that data. The result should be agreement as to the instructor's specific teaching strengths and relative weaknesses. The diagnostician and the instructor then decide which of these

1. Dwight Allen and Kevin Ryan, Microteaching (Reading, Pennsylvania: Addison-Wesley, 1969).

2. Milton Hildebrand, Robert C. Wilson, and Evelyn R. Dienst, Evaluating University Teaching (Berkeley: Center for Research and Development in Higher Education, 1971).

teaching skills and behaviors the instructor will work toward improving.

Once that decision has been made, the instructor has available an assortment of teaching improvement options. Furthermore, the diagnostician can develop additional needed strategies and materials as he or she works with an instructor. Examples of teaching improvement strategies already tested are consultation with the diagnostician or other experts; viewing classroom videotapes and listening to audiotape, alone, with diagnostician, and/or with students; using live and taped models; practice sessions; soliciting the active cooperation of students; real-time critical analysis; microteaching; drawing on published materials; working with peers; and, using Clinic generated packets which combine various media materials. The instructor may turn to other improvement strategies as well, and most are implemented with the assistance of a diagnostician.

The process continues with an evaluation of the instructor's and the diagnostician's efforts. Data regarding the instructor's teaching skills and behaviors is collected again and examined for evidence of teaching improvement. During a final interview, the instructor is asked for a written and oral critique of the Clinic process, the improvement strategies, and the diagnostician. Refinements of the evaluation process are continuing.

Development and Implementation of Clinic Instructional Services to the University of Massachusetts

Although the primary objective of the Clinic to Improve University Teaching involves diagnosis and improvement, a number of secondary goals are incorporated into the project. Chief among these is instructional dissemination. The program aspires not only to train better teachers, but also to offer the fruits of its research and experience to a variety of students from different backgrounds who might profit from the in-depth work done in the fulfillment of its primary purpose. During the first fully operational year, there were three basic types of instructional services offered at the University of Massachusetts: the Summer Institute, formal learning experiences, and the applications of the process to secondary and elementary schools.

The Summer Institute held in 1973 has already been discussed in this section. Its role in developing additional strategies and extending the activity of the Clinic to a new group of faculty has been noted. It is necessary to emphasize, however, that this work represented only half of the Institute's total function. Classes were led by Summer Institute consultants for the University community as a whole. Each weekday afternoon a large number of interested students and professors, therefore, had access to the philosophy and details of the Clinic process and to a group of professionals listed in Appendix A. The Summer Institute clearly demonstrated the advantages which accrue when faculty from different departments work together on teaching improvement and escape the confines of traditional

disciplinary compartmentalization. There is every expectation that these Institutes will become a regular Clinic service.

Whereas this activity was limited to the Summer session, Clinic-sponsored learning experiences were in operation during the entire year. The University of Massachusetts' School of Education operates under a system known as the Flexible Curriculum. This allows instructors to break the shackles of the three-credit, semester-long course, enabling them to structure their learning experiences in any durational format and at any level of intensity which is desirable for a specific set of instructional objectives and students. Within this system, "courses" range in length from one hour to four years. This modularized curricular structure allowed the Clinic staff to develop and implement a wide variety of educational offerings, most of them aimed at graduate students. The project thereby made available its expertise in areas such as the technical skills of teaching, microteaching in higher education, teacher improvement strategies, the literature of teaching improvement, and diagnostic skills. An additional learning experience is now being developed to train teaching assistants, this work being done jointly between the Clinic staff and the Chemistry department at the University. Finally, a number of brief, introductory presentations were made at School of Education weeks known as "Marathon" which draw guests from all over the nation for an intensive, rapid-fire introduction to the current state of the art in education. This instructional role is a major emphasis of the Clinic to Improve University Teaching, one which is projected to increase in scope during the next two years.

Perhaps the most impressive example of this type of service is a separate project in its own right. Known as the Inservice Innovator program, it is a federally funded, $257,000 one-year grant supported by the United States Office of Education. Its goal is to train administrators and teacher educators in a way that will facilitate responsive and responsible innovation in their home district. Trainees include superintendents, assistant superintendents, principals and teacher trainers, with an emphasis on secondary education. Twenty-one of them are now at the University of Massachusetts for one year working towards Doctorate of Education degrees. While they are being trained they simultaneously develop an individualized program of service for their home districts.

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